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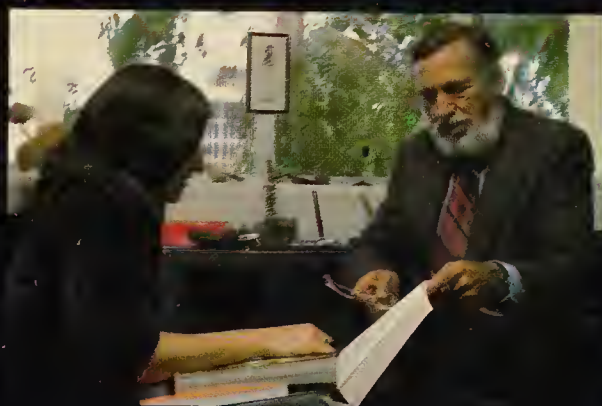
UNIVERSITY
OF CALIFORNIA

UC
SB

SANTA BARBARA

80
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GENERAL CATALOG



“If the highest element of the soul is the rational part, as Plato believed it to be, then that is the portion which makes it possible for humans to have knowledge and understanding. In this context, the mission of higher education—liberal arts education, if you will—is to move students up the Platonic value scale, thereby civilizing them, so that the rational element of the soul becomes supreme within each of us.”

Robert A. Huttenback, *Chancellor*



**UC
SB**

GENERAL CATALOG

**80
81**

UCSB (USPS 646-800)

University of California, Santa Barbara
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All announcements herein are subject to revision.

Cover design by Richard Ayling

Calendar, 1980-81

	<u>Fall '80</u>	<u>Winter '81</u>	<u>Spring '81</u>
Opening dates for filing applications for admission to undergraduate status to be filed with the Admissions Office. Subject to closing without notice.	Nov. 1, 1979 Wednesday	July 1, 1980 Sunday	Oct. 1, 1980 Monday
Opening dates for intercampus transfer.	Nov. 1, 1979	July 1, 1980	Oct. 1, 1980
Opening dates to apply for readmission to be filed with the Registrar's Office by students who have been absent or who withdrew within the last quarter in attendance. Subject to closing without notice.	Nov. 1, 1979	July 1, 1980	Oct. 1, 1980
Final date for applications, application fees, and credentials for admission to graduate status to be filed with the Dean of the Graduate Division.	May 1, 1980 Thursday	Nov. 1, 1980 Saturday	Feb. 1, 1981 Sunday
Last day to pay fees to hold space in classes reserved through pre-enrollment. Fees must be in the Cashier's Office before 4:00 p.m.	Sept. 5, Friday	Dec. 5, Friday	Feb. 26, Thursday
Quarter begins.	Sept. 22, Monday	Jan. 5, Monday	March 26, Thursday
Registration, Counseling, and Testing.	Sept. 22, Monday thru Sept. 26, Fri.	Jan. 5, Monday	March 26, Thursday
Classes begin.	Sept. 29, Monday	Jan. 6, Tuesday	March 27, Friday
Last day to pay fees without permission of Registrar.	Oct. 10 Friday	Jan. 16, Friday	April 9, Thursday
Dead Week. Faculty are requested to avoid scheduling mid-terms and final examinations in this period. No student or faculty sponsored evening events are scheduled for this week.	Dec. 1, Monday to Dec. 7, Sun	March 7, Saturday to March 13, Fri.	May 30, Saturday to June 5, Fri.
Classes End.	Dec. 5, Fri.	Mar. 13, Fri.	June 5, Fri.
Final Exams.	Dec. 8, Mon. thru Dec. 13, Sat.	Mar. 14, Sat. thru Mar 20, Fri.	June 6, Sat. thru June 12, Fri.
Quarter ends.	Dec. 13, Sat.	Mar. 20, Fri.	June 12, Fri.
Commencement.			June 13, Sat. June 14, Sun.



Administrative Holidays

Labor Day • Monday, September 1, 1980

Thanksgiving • Thursday and Friday, November 27, 28, 1980 (Classes dismissed at 3 p.m. Wed. Nov. 26)

Christmas • Thursday thru Friday, December 25, 26, 1980

New Year • Thursday thru Friday, January 1, 2, 1981

President's Day • Monday, February 16, 1981

Spring Holiday • Monday, March 23, 1981

Memorial Day • Monday, May 25, 1981

Summer 1981

Pre-enrollment for Summer Session March 1, 1980

Last day for applications to the Summer

Program for High School Juniors June 1, 1980

Summer Session High School Junior

Program begins June 22, 1981

Instruction begins for Summer Session June 22, 1981

Instruction ends for Summer Session August 4, 1981

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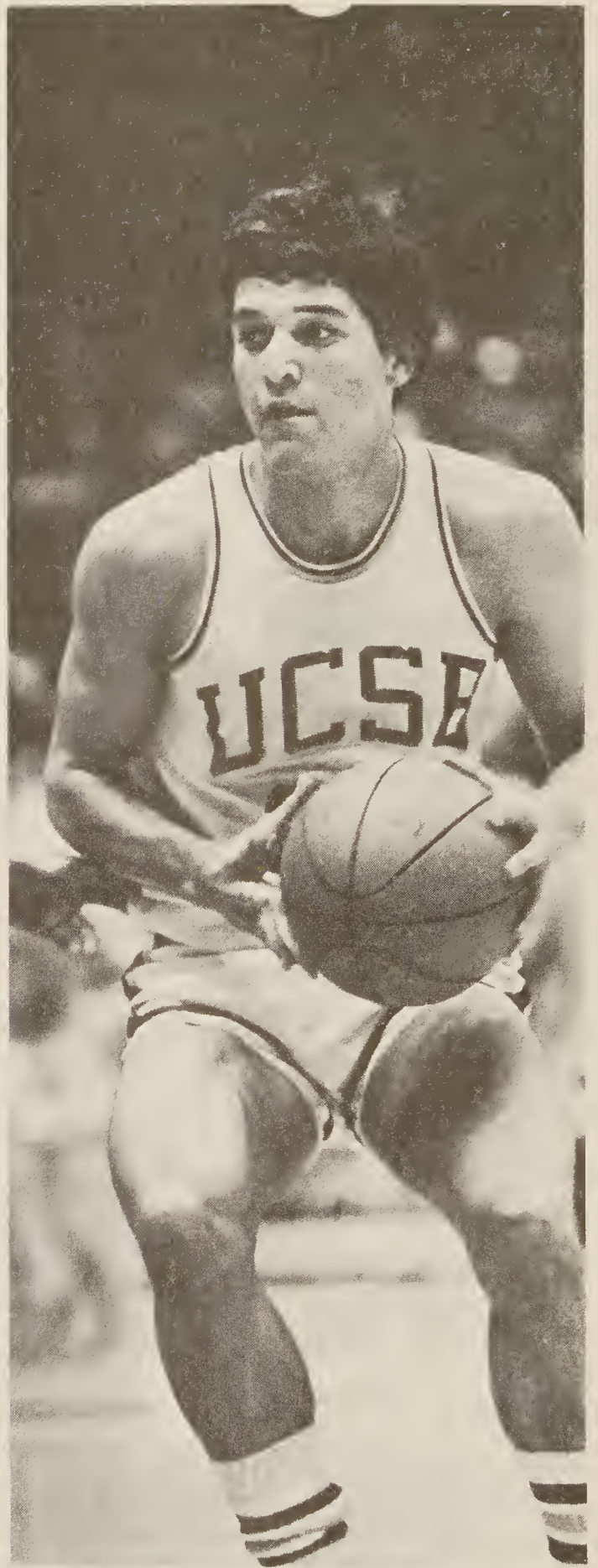
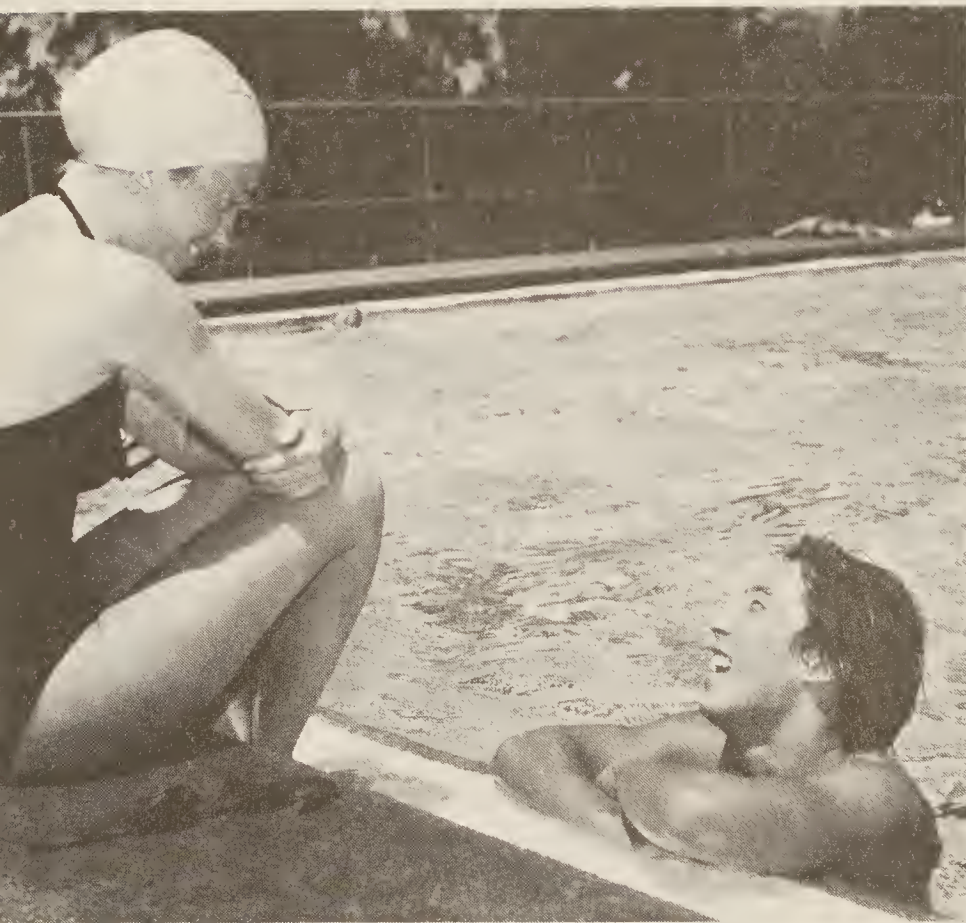
Will Swalling: 7, 10 (upper rt), 10 (lower rt), 24, 48, (lt), 48 (rt), 77, 82, 85, 89.

Len Wood: 45.

Contents

A	Introduction to UCSB	A1 The University Experience 7	A6 Degrees and majors offered 18
		A2 History of the University 12	A7 Academic facilities 22
		A3 Academic Units 12	A8 Accreditation 23
		A4 Campus and Community 14	A9 Undergraduate research 23
		A5 Additional Academic Programs 16	A10 Organized research units 23
B	Admission to the University	B1 Undergraduate Admission 28	B6 Limited status 33
		B2 Admission as a freshman 29	B7 Second baccalaureate 33
		B3 Admission to advanced standing 31	B8 Intercampus transfer 33
		B4 Admission of Nonresidents 32	B9 Graduate status 34
		B5 Additional Information 33	B10 Applicants from other countries 34
C	Fees, Expenses, and Financial Aid	C1 Fees and expenses 35	C5 Housing 38
		C2 Explanation of fees 36	C6 Financial Aid 39
		C3 Refunds 37	C7 Undergraduate scholarships 40
		C4 Food Services 38	C8 Graduate fellowships 41
D	Student Services and Activities	D1 Academic counseling 45	D6 Services to disabled students 47
		D2 Student services 46	D7 Other services 48
		D3 Counseling and career services 46	D8 Student activities 50
		D4 Student Health Service 47	D9 Student government 50
		D5 Educational Opportunity Program 47	D10 Student organizations 50
E	International Students	E1 Admission to the University 53	E4 Orientation 54
		E2 English Language Placement Examination (ELPE) 54	E5 Nonresident tuition 54
		E3 Office of International Students and Scholars 54	E6 Health insurance requirement 54
			E7 Financial aid 54
			E8 Part-time employment 54
F	Education Abroad Program	F1 Concerns of the program 57	F6 Student conduct and parental approval 58
		F2 Purpose 57	F7 Cost and financial aid 58
		F3 The academic program 57	F8 Other arrangements 58
		F4 Academic planning and advising 57	F9 Overseas campuses 59
		F5 Selection 58	
G	Registration Regulations	G1 Registration 66	G5 Examinations 69
		G2 Study Lists 67	G6 Units and grading systems 69
		G3 Absence and withdrawal 67	G7 Academic eligibility 72
		G4 Additional enrollment opportunities 68	G8 Student conduct and responsibility 72
H	Bachelor's Degree Requirements	H1 Introduction 74	H5 Academic residence requirements 75
		H2 Subject A—English composition 74	H6 Grade point average requirement 76
		H3 American history and institutions 75	H7 Major requirements 76
		H4 Unit requirements 75	
I	Graduate Division	I-1 Introduction 77	
		I-2 Admission into the Division 78	
		I-3 Requirements and regulations 78	
J	Graduate School of Education	J1 Introduction 80	
		J2 Master's degree programs 80	
		J3 The degree of Doctor of Philosophy 81	
		J4 Specialist/services credentials 81	
		J5 Teaching credentials 81	
K	College of Creative Studies	K1 Introduction 83	
		K2 College Requirements and Curriculum 83	
		K3 Grading and Unit Requirements 84	
L	College of Engineering	L1 Introduction 85	L4 Unit requirements 87
		L2 Admission 85	L5 Minimal progress requirements 87
		L3 College requirements 86	L6 Summary of degree requirements 88
M	College of Letters and Science	M1 Aims of the College 89	M4 College requirements 91
		M2 Special programs and options 90	M5 Unit requirements 96
		M3 Majors offered 90	M6 Summary of degree requirements 96
			M7 Preprofessional programs 96
N	Departmental Information and Courses of Instruction	N1 Presentation of offerings 98	
		N2 Numbering of courses 98	
		N3 Sample course listing 99	

Library



Introduction to UCSB

A



Three Nobel Laureates in physics ponder a problem at the National Science Foundation Institute for Theoretical Physics on the UC Santa Barbara campus. They are, (l-r), J. Robert Schrieffer, professor of physics at UCSB; John Bardeen, professor emeritus of physics and electrical engineering at the University of Illinois; and, Hans A. Bethe, professor emeritus of physics at Cornell University.

A1 The University experience

by Robert L. Kelley, Professor of History

What makes a great university such as the University of California different from a high school or a community college? Life in a distinguished academic community is not just a continuation of what the student may have already been doing for some years. The university will be a new experience because of the faculty, the setting, the institution's purpose, and the diversified student body.

Great universities are built around the notion that they should create knowledge as well as pass it on. This is the central purpose of the University of California. Its professors not only teach, they are continuously engaged in research. They actively participate in an international community of scholars and scientists. They follow each other's work,

read and criticize it, jointly make break-throughs and consolidate them, meet regularly at national and international meetings, and spur one another on.

Being held up to high standards in their own work by scholars elsewhere, UC professors tend to bring into the classroom the same heightened expectations for their graduate and undergraduate students. Furthermore, their teaching often grows out of their own research. Thus, students have the opportunity to study with professors whose works are judged continuously by experts in their fields, and who are themselves, frequently, leading authorities. This alone does not assure good teaching. But if a professor also has the natural ability to teach well, such expertise makes him or her an even more effective instructor. Carnegie Commission studies show that students at research ori-

ented universities tend to be happiest with the instruction they receive.

The people of California, through their state legislature, have made a huge investment in the creation and advancement of the University of California because they see it as an important center of publicly funded research and a potential source of leadership for the state and the nation. Thus students assume a certain obligation when they are admitted to the University to use this crucial time in their lives to become genuinely educated persons, alive to the larger questions of life, to read and think carefully, and to acquire valuable training in a particular body of knowledge. At UCSB, the student is surrounded by a great complex of learning resources and activities, including sophisticated teaching and research laboratories, vigorous programs of study in many fields of knowledge, a major research library which receives thousands of new books and journal issues each year, busy concert halls and drama stages, a complex of advanced computer facilities, public lectures, discussions and debates featuring distinguished scholars and scientists from the international academic community, and a dozen research institutes. All these combine to provide students with an opportunity to explore the spectrum of academic fields and thus to acquire a broad education while concentrating in their chosen disciplines.

The student body of a university is likely to be quite different from those previously encountered. Our students are drawn not only from throughout the nation's largest state, but from most of the other states of the Union and from scores of foreign countries. Graduate and reentry students are frequently somewhat older than the usual under-



graduate. About one in ten undergraduates is more than twenty-five years of age, many of them returning students resuming their education or acquiring new skills and initiating new careers. UCSB receives each year a large number of transfer students from other schools of higher learning. Minority programs, both support and academic, bring representatives of all the ethnic minorities to the student body. UCSB also seeks to make available to its women students (they form half the student body) additional educational and career opportunities through its Women's Center and by a significant representation of women in programs such as engineering and the sciences, once populated mainly by men.

The classroom schedule may also be somewhat different from that with which entering students have been familiar. Much of the time they will be on their own, time which they can use for study. This may require greater self-discipline, but such disciplined study is at the heart of the University experience. Many of our students plan to pursue graduate degrees, but to enter graduate study, they must have done superior work as undergraduates. Indeed, in the more competitive fields their work must have been quite outstanding. This lends added incentive to do well as a student at UCSB. To meet that challenge is an exhilarating experience.

A well developed university

UCSB has been an institution of higher learning for more than seventy years and a campus of the University of California for half that time. Its evolution into a UC campus began in 1909 when the State of California created the Santa Barbara State Normal School out of what had been since 1891 a school for training in home economics, industrial arts, and education. By 1935, a four-year curriculum had been developed and the campus was des-



A residential campus

The 1970's were a time of consolidation. Some forty-nine permanent buildings were built, the Library collection exceeded a million titles, what had been a bare mesa became a beautiful, verdant campus, a sense of "place" emerged. Since three quarters of UCSB's some 14,000 students live on or just off the campus within easy walking or bicycling distance of the Library — which sits where all the campus paths converge — UCSB has become a residential campus. The level terrain also makes it a particularly appealing campus for the handicapped.

Here students will find academic programs in nearly all the traditional fields of study on both the undergraduate and graduate levels. At the same time, they will find a student body sufficiently large and diverse to provide the particular world that most appeals to them. They will also encounter a rich and well-developed student life on a campus which does not go quiet at 4 p.m. as at commuter institutions, but remains lively on into the evening with classes, concerts, plays, debates, dance programs, and many other activities.

On busy playing fields, UCSB students participate in an exceptionally active intramural sports program and in some 17 intercollegiate sports for both men and women. UCSB is also a campus which boasts a fully developed and vigorous student government and a daily student newspaper (and other publications) standing in close criticism of those elected to student office, making it a functioning political community with vigorous student participation.

igned as the Santa Barbara State College. In the years which followed, its liberal arts degree programs were widely expanded. Indeed, its academic excellence was such that in 1944 it was incorporated into the University of California system, joining Berkeley and Los Angeles as one of the three UC campuses offering general undergraduate instruction.

The school soon outgrew its small campus on the hill above Santa Barbara and in 1954 moved to its present 815 acre site on Goleta Point. Then, to meet the needs of California's rapidly growing student population, in 1958 it gained "general campus" status and a new name: the University of California, Santa Barbara. Charged with developing a wide range of new programs, including graduate study to the doctoral level, UCSB grew swiftly during the 1960s. Students from all over the state and nation found it an attractive and academically stimulating place in which to study, and new faculty members were brought in from around the world to teach them.

The campus also acquired a broader academic base. To the College of Letters and Science were added the College of Engineering, the College of Creative Studies, the Graduate Division, and the Graduate School of Education. Ten organized research units were established, and within the past year the campus has been augmented by the Institute for Theoretical Physics, funded by the National Science Foundation, and the Robert Maynard Hutchins Center for the Study of Democratic Institutions, which was established in 1959 and recently relocated on the UCSB campus.



A



A UCSB student demonstrates a specimen tank at the Marine Science Institute during University Day.



These three 80-gallon tanks in a glass-covered wooden box have been installed to solar heat laundry water at UCSB's West Campus apartment complex.



Mechanical engineering students show their wind turbine design, which increases the amount of energy extracted from the wind.



A medium-sized university

Campus size is a crucial point to consider when choosing which institution to attend. A small college is like a village; a medium-sized university is like a town; a large university is like a city. Each setting has its own characteristics.

UCSB is a medium-sized university; that is, it is a sort of academic town. Because the campus is physically compact and all its paths converge, and because the numbers of people here are not so great that students tend to develop separate worlds, students see their friends and acquaintances regularly, and not infrequently their professors as well. This makes for a sense of community and comradeship. The buildings are not overly large, there is much open space, and the architecture has retained a human scale. Most academic departments are of moderate size. Since faculty members see each other frequently, many programs and majors cross departmental lines and draw from a number of academic disciplines.

On the other hand, a medium-sized university is large enough to develop strength and depth in all the traditional disciplines. It has laboratories and libraries sufficient to attract the best scholars and scientists, and numbers of professors within particular academic fields large enough to hit a "critical mass," that point where the academic sparks begin to fly and new ideas emerge. The scholarly enterprise relies heavily upon the existence of a vigorous community of academics who meet and talk and challenge one another. Fine scholars may

languish if they are isolated in small institutions with few who share and spark their interests. So, too, a campus needs enough students — especially advanced and graduate students — in particular fields to provide the same influences for each other.

Balance across the academic spectrum

It is sometimes asked, in what does your campus specialize? This question arose naturally during the 1960s, when so many new campuses were being built, because it was their tendency in the search for identity to stress one or another field. Thus, many campuses do in fact live within a particular aura, an atmosphere cast by a particular set of academic departments so strong and developed that they set the tone for the entire enterprise.

Santa Barbara has avoided this tendency. Its distinctive characteristic is not specialization, but balance among the academic fields. We have built a campus where students in the arts feel just as much at home as those in the sciences or the social sciences. Perhaps because UCSB grew out of a liberal arts college with a broad program of educational requirements, each of the traditional academic fields is as strong as the others. UCSB graduates as many students with bachelor's degrees in the natural sciences and in engineering as it does in the social sciences and in the humanities. Its graduate programs are equally well distributed between fields as diverse as classics and marine science. UCSB has distinguished professors not in



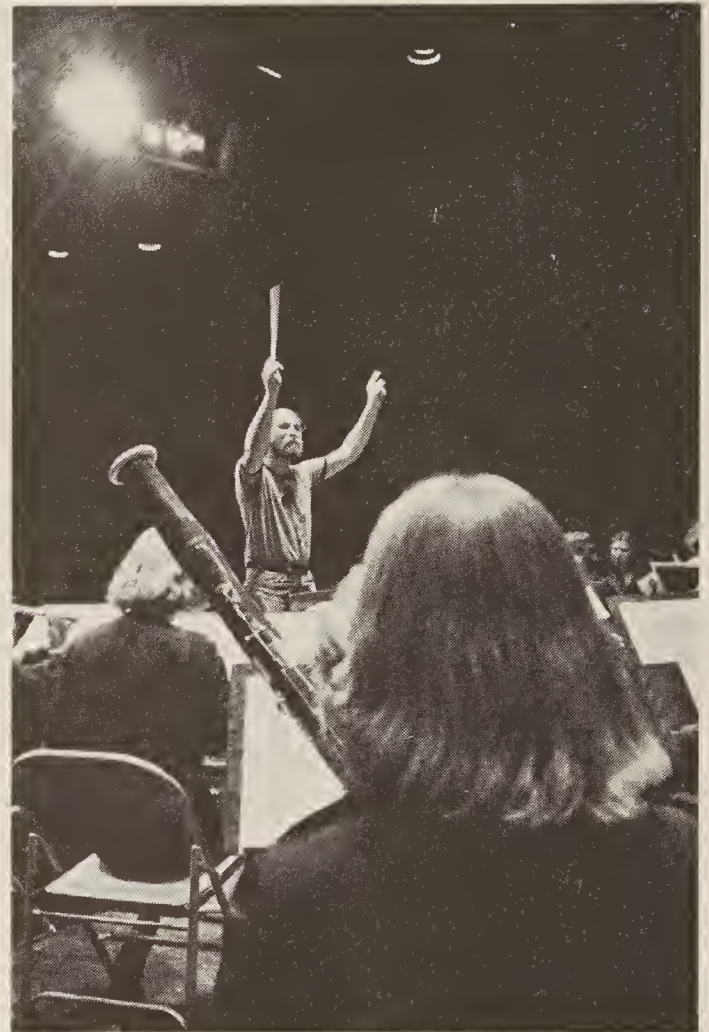
Don Zak, engineering research associate, demonstrates the magnification of a scanning electron microscope to visiting parents and students on University Day.

just one field but across the academic spectrum. Its large science and engineering laboratories are matched by populous programs in the arts, and by busy stages, concert halls, and art galleries. The Santa Barbara campus has a vigorous Capitol Hill program for placement of student interns in Sacramento and Washington and at the same time publishes one of the nation's most honored student literary magazines.

We believe that in such a balanced academic setting students have the greatest freedom to make choices as they proceed, often trying out more than one major before finding that field which most appeals to them. The principle of balance creates, we believe, the best setting in which students may work through a crucial period of their lives, years of experimentation and intellectual adventure. Welcome to that adventure!

A2 History of the University

The University of California was founded in Oakland in 1868 and moved to Berkeley in 1873. It has since become one of the world's great institutions



of higher learning and research. The University system includes nine campuses from Davis to San Diego, six major research units, and nine agricultural field stations. A statewide University Extension program is coordinated by 53 offices. For additional information concerning the UC system consult the University of California *Undergraduate Admissions Circular* which may be obtained from the Admissions Office. See inside back cover for the address.

A3 Academic units

UCSB consists of the College of Creative Studies, the College of Engineering, the College of Letters and Science, the Graduate Division, and the Graduate School of Education.

College of Creative Studies

This college, which enrolls undergraduate students with a demonstrated talent for independent work in the arts, mathematics, or the sciences, was established in 1967. The college is unique in the

UC system. Majors are offered in Art (Painting and Sculpture), Biology, Chemistry, Literature, Mathematics, Music Theory and Composition, and Physics. Work in the college leads to the Bachelor of Arts degree. See **K** for additional information concerning the College of Creative Studies.

College of Engineering

The College of Engineering offers professional undergraduate and graduate education in five disciplines: computer science, chemical, electrical, mechanical and nuclear engineering. The engineering programs are accredited by the Engineers' Council of Professional Development.

Originally established as a School of Engineering in 1961, it was redesignated as the College of Engineering in 1968. About 1130 undergraduate and 280 graduate students are enrolled in the four academic departments of the college, which are: Chemical and Nuclear Engineering, Computer Science, Electrical and Computer Engineering, and Mechanical and Environmental Engineering.

The programs in each major are designed to provide a student with the mathematical, scientific, analytical and cultural sophistication required for entry into professional engineering practice, for graduate study in engineering, or for entry into an increasingly wider range of allied fields including law, medicine, business, and public administration. Academic programs are sufficiently flexible to accommodate a variety of individual needs and desires in fulfillment of immediate and long-range plans. See **L** for additional information concerning the College of Engineering.

College of Letters and Science

This liberal arts college was established in 1961 and now has an enrollment of nearly 11,500 undergraduates. More than 70 major programs are available, encompassing traditional fields of study as well as many interdisciplinary and innovative academic programs. (See chart in Section **A6**.) Three degrees are awarded by the college—Bachelor of Arts, Bachelor of Science, and Bachelor of Music. The General Education Program, the nucleus of undergraduate study, permits the development of a program of courses appropriate to the individual student. See **M** for additional information concerning the College of Letters and Science.

Graduate Division

Through its Graduate Division, UCSB offers advanced programs of study leading to the Master of Arts and Doctor of Philosophy degrees in many fields. See the chart in **A6** for a complete listing. Other degrees awarded through the Graduate Division are the Master of Fine Arts in studio subjects, the Master of Science, the Candidate in Philoso-

phy, and the Master of Education. The Translator-Interpreter Certificate is also available in three languages. See **I** for additional information concerning the Graduate Division.

Graduate School of Education

The Graduate School of Education offers preparatory programs for careers in teaching, research, and scholarship, and for leadership in a variety of service and instructional specialization. More than half of the student body of the Graduate School of Education enrolls in programs which lead to the degrees of Master of Arts, Master of Education, or Doctor of Philosophy. The master's degrees are offered in nine areas of concentration and the PhD in six. Somewhat less than half the students prepare for California teaching credentials at the elementary or secondary levels. A substantial number of students pursue a master's degree in conjunction with qualifying for an advanced specialist or service credential.

A Counseling Psychology Training Clinic, a Reading Clinic, and a Parent-Child Center provide supervised experience in applying classroom and seminar learning to practice with clients *in vivo*. See **J** for additional information concerning the Graduate School of Education.





A4 Campus and community

The campus setting

The UCSB campus is situated on an 815 acre promontory on the Pacific seashore. It is bordered on two sides by the ocean and on the third by the community of Isla Vista. On the fourth side, the campus faces the Santa Ynez mountain range across the Goleta Valley. The Main Campus contains most of the 49 permanent buildings which house the University. The outlying Storke Campus includes playing fields and a family student housing complex. The West Campus, which is largely undeveloped, contains an ecologically significant expanse of dunes which has been set aside as a natural preserve. Near the campus is the Santa Barbara Municipal Airport, with connecting service to and from Los Angeles, San Francisco, and other major cities. The four-lane Highway 101 passes less than a mile from UCSB, with clearly marked turn-offs leading to the campus. Santa Barbara also may be reached by Amtrak and by regular bus service, with connections to the campus.

On campus and between the campus and nearby residential areas, the principal means of transportation is the bicycle. A seven-mile system of bike paths and three bicycle underpasses separate cyclists from pedestrians and motorists. The



fact that the campus is constructed on a level plateau contributes to the ease with which students with a variety of mobility impairments can navigate the natural terrain. Mini-buses operate between the campus and surrounding communities, and are free to registered UCSB students. Easy Lift buses operated by the community are available to students with disabilities.

Recreational facilities include tennis courts, more than a mile of swimming and surfing beach, an Olympic-sized swimming pool accessible to the handicapped, extensive playing fields, a synthetic-surface track, a baseball diamond, two gyms, and a 14,000-seat stadium. The Santa Barbara climate is ideal for outdoor activities year-round. See **D11** for more information concerning recreation.

The community

UCSB is located in the Goleta Valley about 10 miles from downtown Santa Barbara. Southern Santa Barbara County has a population of about 150,000.

Adjacent to the University is the community of Isla Vista made up of 10,000 residents, half of whom are UCSB students. Isla Vista is bounded on three sides by the University and on the fourth by the ocean. Less than a square mile in area, it has provisions for a variety of student services and needs.

The city of Santa Barbara offers a diversity of natural and cultural attractions. Notable among

these are the Museum of Art, the Historical Society Museum, the Museum of Natural History, and the Botanic Garden. UCSB classes sometimes are held at the Museum of Natural History, and programs frequently are arranged at the Museum of Art. The Botanic Garden is available to classes and advanced students in botany, and a research laboratory has been established there for independent investigation by students and faculty.



Santa Barbara County Courthouse

A



A5 Additional academic programs

Summer sessions

A six week summer session is offered each year after the close of the spring quarter. The summer session program includes regular lower and upper division courses, special study undergraduate courses, selected graduate courses, and standard teaching credential courses. The *Summer Sessions Bulletin*, published each spring, contains a list of summer session courses. It may be obtained upon request from the Summer Sessions Office. See inside back cover for address.

Qualified high school students who have completed their junior year may enroll in a special college-level Summer Session program for which they receive full University credit. Application forms for the High School Program are available from the Summer Sessions Office.

A special UCSB Summer Institute in French Language and Culture is conducted annually. Qualified students may obtain a Master of Arts degree in French in three summers. A Summer Institute in Portuguese is also held each year offering lower and upper division courses in that language. Application forms and information concerning both institutes are available from the Summer Sessions Office.

University Extension

University Extension makes the educational resources of the University available to individuals and organizations in Kern, San Luis Obispo, Ventura, and Santa Barbara counties. Extension programs include educational opportunities for adults

in professional, administrative, and managerial fields. A number of sequential programs which lead to the award of a Certificate or Professional Designation in various fields are available. Certificate programs are described in publications available from UC Extension.

Other programs enable interested persons to pursue their own intellectual and cultural objectives.

A program of summer courses and workshops is offered regularly. Veterans may use educational benefits available to them to enroll in the UC Extension classes if the classes are part of the objectives approved by the Veterans Administration. Additional information and catalogs may be obtained from the UCSB Extension Office. See inside back cover for address.

English language program

University Extension offers a year-round program of Intensive English courses for professional people and students from foreign countries, designed to develop and improve their English language skills. The course is appropriate for individuals who wish to pursue academic programs at universities in the U.S. or who plan to return to their own countries. These courses are 10 weeks in length, consist of a total of 250 hours of instruction and require full-time study. For further information, contact University Extension, UCSB.

Concurrent enrollment

Members of the community may enroll through University Extension classes on campus by concurrent enrollment. Admission is by written consent of the instructor and/or department chairperson only after all regularly enrolled students have been accommodated. Fees are based on the number of units taken. Credit earned may be used by matriculated students, upon petition, to satisfy degree requirements at UCSB, but grades are not averaged in the GPA. Concurrent enrollment does not constitute admission to the University of California. For further information, contact University Extension. (See Also **G4.**)

Education Abroad Program

The University of California offers an outstanding overseas study program, in cooperation with schools in 21 countries as described in **F**. More than 650 students, primarily undergraduates, take part in this program each year. Participating students remain registered on their home campuses while studying abroad, and receive full academic credit for their work. Approximately 150 international students, with scholarships provided through the University of California and their home institution, attend the University under the sponsorship of the EAP. The administrative offices of the University-wide EAP are located on the UCSB campus. Students are invited to apply at Room 1231 Girvetz Hall.

Arts and Lectures

The University Committee on Arts and Lectures pursues a two-fold mission by serving the cultural life of the campus and surrounding communities, and extending and supplementing the intellectual life of the classroom. Through the committee, the University brings outstanding productions, lecturers and performing artists to campus each year. These events, to which the public is cordially invited, include films, art exhibitions, dance events, concerts, plays and lectures.

During each academic year, the University sponsors a concert series of world-renowned artists.

Touring drama and dance companies of distinction are invited to perform on campus, and a series of from 30 to 40 lectures, covering a wide variety of topics of general interest, is presented annually. Distinguished persons visit the campus for varying lengths of time as Regents' Professors and Lecturers.

Two weekly film series are presented each quarter. Films are selected with broad ranges of style and subject matter. The Departments of Music and Dramatic Art provide an excellent selection of musical, dramatic and dance productions during the year, ranging from the improvisational to the classical.



Los Angeles Chamber Orchestra



A6 Degrees and Majors offered at UCSB

College of Creative Studies				
Majors		Undergraduate Degrees:		
Art (Painting and Sculpture)		BA		
Biology		BA		
Chemistry		BA		
Literature		BA		
Mathematics		BA		
Music (Theory and Composition)		BA		
Physics		BA		
College of Engineering			Graduate Division	
Majors	Department	Undergraduate Degrees	Graduate Degrees	Other
Chemical Engineering	Chemical and Nuclear Engineering	BS	MS, PhD	Certificate (graduate program) in: Circuits and Signal Processing Control and Communication Systems, Bioengineering Computer Engineering Microwaves, Optics, & Acoustics Solid State
Computer Science	Computer Science	BS		
Electrical Engineering	Electrical and Computer Engineering	BS	MS, PhD	
Mechanical Engineering	Mechanical and Environmental Engineering	BS	MS, PhD	
Nuclear Engineering	Chemical and Nuclear Engineering	BS	MS	
College of Letters and Science			Graduate Division	
Majors, Degrees, Programs Offered	Sponsoring Department	Undergraduate Degree(s)	Graduate Degree(s)	Other
*African Area Studies	Black Studies	BA		
Anthropology, Cultural	Anthropology	BA	MA, PhD in Anthropology with emphases in: Archaeology Ethnology	
Anthropology, Physical	Anthropology	BA		
Applied Mathematics	Mathematics	(see a/so Math. Sci.)	MA	
Aquatic Biology	Biological Sciences	BA	(see a/so Biological Sciences)	
Art History	Art	BA	MA, PhD	
Art Studio	Art	BA	MFA in: Ceramics Painting Printmaking Sculpture	
*Asian Studies	Interdepartmental Committee	BA	MA	
Biochemistry/Molecular Biology	Biological Sciences	BA	(see a/so Biological Sciences)	
Biochemistry/Molecular Biology	Co-sponsored by Depts. of Chem. & Biol. Sci.		MA, PhD	
*Interdepartmental major.				

College of Letters and Science (cont'd)			Graduate Division	
Majors, Degrees Programs Offered	Sponsoring Department	Undergraduate Degree(s)	Graduate Degree(s)	Other
Biological Sciences	Biological Sciences	BA	MA, PhD in Biology with <i>emphases in:</i> Aquatic and Population Biology Biochemistry and Molecular Biology Environmental and Evolutionary Biology Physiology and Cell Biology	
Black Studies	Black Studies	BA		
Botany	Biological Sciences	BA	MA	
Business Economics	Economics	BA		
Chemistry	Chemistry	BA, BS	MA, PhD	
Chicano Studies	Chicano Studies	BA		
Chinese, with <i>emphasis in:</i> Classical Mandarin	Eastern Languages	BA		
Coaching Program	Physical Activities			Coaching Program Certificate (Undergraduate)
*Classical Archaeology, with Greek emphasis Roman emphasis	Classics	BA		
*Classical Civilization	Classics	BA		
Classics	Classics	BA	MA, PhD	
*Combination Social Science, <i>with emphasis in:</i> Anthropology Economics History Geography Political Science Sociology	Interdepartmental Committee	BA		
Communication Studies	Speech	BA	(see also Speech Communication)	
*Comparative Literature	Interdepartmental Committee	BA	MA, PhD	
*Computer Science	Computer Science (Coll Engr.)	BA		
Dance	Division of Dance, Dramatic Art	BA		
Developmental Psychology	Psychology	BA		
Dramatic Art	Dramatic Art	BA	MA, PhD	
Economics	Economics	BA	MA (with Urban Economics and Business Economics Options), PhD	
*Economics/Mathematics	Co-sponsored by Depts of Econ. & Math	BA		
English	English	BA	MA, PhD	
Environmental Biology	Biological Sciences	BA	(see also Biological Sciences)	
*Environmental Studies	Environmental Studies	BA		
Ergonomics	Ergonomics & Physical Education		MA	
*Interdepartmental major				

College of Letters and Science (cont'd)			Graduate Division	
Majors, Degrees, Programs Offered	Sponsoring Department	Undergraduate Degree(s)	Graduate Degree(s)	Other
Experimental Psychology	Psychology	BA		
*Film Studies	Film Studies	BA		
French (<i>with optional</i> French Literature and Linguistics emphasis)	French and Italian	BA	MA, PhD in French	French Translator/ Interpreter Certificate (Graduate Program)
Geography	Geography	BA	MA, PhD	
Geological Sciences	Geological Sciences	BA	MA, PhD	
Geology	Geological Sciences			
Germanic Languages & Literatures <i>with emphases in:</i> Literature Language and Civilization	Germanic & Slavic Languages & Literatures	BA	MA, PhD	German Translator/ Interpreter Certificate (Graduate Program)
Greek	Classics	BA		
*Hispanic Civilization	Interdepartmental Committee	BA	MA	
History	History	BA	MA, PhD	
*Individual	Specially appointed	BA	MA, PhD	
Italian	French & Italian	BA		
Latin	Classics	BA		
*Law and Society (<i>with</i> <i>optional</i> Criminal Justice Emphasis)	Interdepartmental Committee	BA		
*Liberal Studies	College	BA		
Linguistics	Linguistics	BA		
Mathematical Sciences	Mathematics	BA, BS	(see a/s/o Applied Mathematics)	
Mathematics	Mathematics	BA, BS	MA, PhD (see a/s/o Applied Mathematics and Statistics)	
*Medieval Studies	Interdepartmental Committee	BA		
*Middle Eastern Studies**	Interdepartmental Committee	BA		
Music, Bachelor of	Music	BM		
Music, <i>with emphases in:</i> Composition History Performance Theory	Music	BA	MA, PhD in Music <i>with</i> <i>emphases in:</i> Composition Music Theory	
Music, Special Performance	Music		MA in Music <i>with</i> <i>emphases in:</i> Conducting Musical Performance	
Pharmacology	Biological Sciences	BA		
Philosophy	Philosophy	BA	MA, PhD	
Physical Education**	Ergonomics and Physical Education	BA	(see a/s/o Ergonomics)	
Physics	Physics	BA, BS	MA, PhD (see a/s/o Scientific Instrumentation)	
Physiological Psychology	Psychology	BS		
Physiology and Cell Biology	Biological Sciences	BA		
Political Science	Political Science	BA	MA, PhD in Political Science	
Political Science (Public Service Emphasis)	Political Science	BA		
Portuguese	Spanish and Portu- guese	BA		

*Interdepartmental major.

**This major to be discontinued; see department entry for details.

**College of Letters and Science** (cont'd)

Majors, Programs Offered	Sponsoring Department	Undergraduate Degree(s)	Graduate Degree(s)	Other
Psychology	Psychology	BA	MA, PhD	
*Public and Social Affairs	Interdepartmental Committee		MA	
Religious Studies	Religious Studies	BA	MA, PhD	
*Renaissance Studies	Interdepartmental Committee	BA		
*Russian Area Studies** (must be completed in conjunction with another major)	Interdepartmental Committee	BA		
Scientific Instrumentation	Physics		MS	
Slavic Languages and Literature	Germanic & Slavic Languages & Literature	BA		
Sociology	Sociology	BA	MA, PhD	
Spanish	Spanish & Portuguese	BA	MA in Spanish, PhD in Hispanic Languages and Literatures	Spanish Translator/ Interpreter Certificate (Graduate Program)
Speech Communication	Speech (see also Communication Studies)		MA	
Speech and Hearing Sciences	Speech	BA	MA, PhD	
Statistics	Mathematics		MA	
Zoology	Biological Sciences	BA	MA	

Graduate School of Education

Program Emphases	Teaching Credential	Specialist Credential	Specialist Certificate	Master of Arts in Education	Master of Education	PhD in Education
Multiple Subject (Elementary)	X (can include Bilingual emphasis)					
Single Subject (Secondary)	X			X		
Bilingual/Cross Cultural Education		X		X		
Confluent Education				X	X	X
Counseling Psychology		X (includes specializations in School Coun- seling and School Psychology)	X (includes specializations in College Student Personnel Coun- seling and Marriage Family, and Child Counseling)	X	X	X
Early Childhood Education		X				*
Educational Administration		X				X
Educational Psychology				X		X
Instruction				X		
International Education						X
Language and Reading Development (can include Bilingual Emphasis)		X		X		X
Speech and Hearing		X (offered through the Dept. of Speech)				

*Interdepartmental major.

**This major to be discontinued; see department entry for details.

Preprofessional Fields. Students at UCSB often plan to enter professional school after graduation. While fulfilling their bachelor's degree requirements at UCSB, they may complete all or most of the prerequisites for admission to a variety of professional programs. See **J-4** and **M-6** for additional information.

*Doctoral work in Early Childhood Education may be pursued as part of either the Educational Psychology or the Language and Reading Development concentrations.

A7 Academic facilities

The University Library

The UCSB Library, the largest on the west coast between Los Angeles and the Bay area, is a member of the Association for Research Libraries and of the Center for Research Libraries. It serves the University community with 1,325,000 volumes, a 22,000 disc record collection, current serials numbering 18,000, and 120 newspapers. Another half million volumes are available in microform.

In addition to the general book collection in open stacks, several specialized collections are maintained for scholarly research. Among these are the Sciences-Engineering Library, the Map and Imagery Laboratory, the Technical Report Collection, the Government Publications Department, the Curriculum Collection, the Chicano Studies Unit, the Black Studies Collection, the Oriental Collection, and the Department of Special Collections. The Arts Library which includes both art and music is housed in a separate building. Online computer-based bibliographical search services are available, and the computerized library lending procedure is also online. Specialized equipment and assistance are also available for handicapped students in a Special Services Unit staffed by student helpers and sponsored by the Office of Student Services.

The Library publishes several booklets which provide detailed information about its services and

facilities. These are available upon request from the Office of the Librarian, Main Library, UCSB.

UCSB Art Museum

The UCSB Art Museum, accredited by the American Association of Museums, brings to the campus exhibitions of paintings, sculpture, printmaking, drawing, ceramics, indigenous art, and architecture. Presentations include historic and contemporary art as well as work by faculty and students.

The Museum's permanent collections include the Sigmund Morgenroth Collection of Renaissance and Baroque medals and plaquettes; the Sedgwick Collection of 15th, 16th and 17th century European paintings; prints and drawings from the 16th century to the present including the Ala Story Graphic Arts Collection; and the Helm and Goodspeed Collections of pre-Columbian art. The Museum also houses the Southern California Architectural Archives, which include drawings by Irving Gill, R. M. Schindler, J. R. Davidson, John Byers, Elda Muir, George Washington Smith, Carleton M. Winslow, and Lulah Maria Riggs.

The Computer Center

The Computer Center provides a wide range of batch and interactive computing services on the ITEL AS/6 and PDP 11 computer systems. A campus-developed online graphics system, the WYLBUR text editor and the conversational Monitor System are run on the AS/6 in addition to standard batch software.

Several clusters of terminals have been strategically located on campus, including two in a classroom setting. A link to the campus educational television network provides computer access from several large lecture halls.

Minicomputer systems which augment the central facilities are available in several departments



and laboratories to meet other research and instructional needs. Information regarding the use and capabilities of the Center may be obtained by contacting the Computer Center. See back cover for address.

Instructional Development

The Instructional Development Organization, in the Clark Kerr Learning Resources Building, consists of the Office of Instructional Consultation and the Department of Learning Resources. The primary function of the organization is to provide a better undergraduate and graduate experience at UCSB by making teaching more effective through the use of instructional methods most likely to achieve the shared goals of the institution, instructors, and students.

Instructional Development provides consulting, development, evaluation, production, and media support systems to maintain high levels of instruction, and to develop new and more effective approaches to the improvement of student learning. It maintains special facilities to aid individual student learning in the Learning Laboratory in Kerr Hall as well as the Language Laboratories and Mathematics Laboratory in Phelps Hall. It operates the campus Teaching Assistant Training Program and Instructional Improvement Program. See inside back cover for address.

Conference facilities

UCSB offers conference facilities for organizations whose requests reflect a clear and definable educational objective. The Department of Housing and Residential Services provides complete conference services during the summer period. Further information may be obtained by consulting the Residential Conference Coordinator, 1501 Residential Services, University of California-Santa Barbara, Santa Barbara, California 93106.

A8 Accreditation

The University of California at Santa Barbara is fully accredited by the Accrediting Commission for Senior Colleges and Universities, Western Association of Schools and Campuses.

Additionally, the credential programs of the Graduate School of Education are approved by the Commission for Teacher Preparation and Licensing; the Engineering Council for Professional Development accredits the chemical, electrical, mechanical engineering programs of the College of Engineering; and the Education and Training Board of the American Speech and Hearing Association accredits the speech pathology program of the Department of Speech. See inside back cover for address.

A9 Undergraduate research

Discovery, UCSB Journal of Undergraduate Research

Undergraduate students doing high quality original research and writing have the opportunity to bring their work to culmination as published articles in the undergraduate research journal, *Discovery*.

Manuscripts from all scholarly fields are considered. The work appearing in a paper is usually done under the supervision of a faculty member who is in a position to recommend the paper to the journal. Examples of publishable work are research papers, critical essays, and expanded term papers. Submitted papers are reviewed by a broadly representative editorial board of faculty members. Copies of the journal are distributed to the Library of Congress, all University of California campus libraries, and selected out-of-state university libraries. Students who wish to take advantage of this opportunity may obtain the necessary information concerning publication in the editorial office of the journal, Room 2322 Girvetz Hall.



A10 Organized Research Units

Ten special research groups at UCSB operate outside established academic teaching departments. These Organized Research Units (ORU) are

made up of faculty members and graduate students engaged in the investigation of a particular subject of mutual interest from a number of viewpoints and disciplines. The ORUs provide research facilities and invaluable experience for students and faculty in basic and applied research.

It should be noted that no courses of instruction and no degree programs are offered through the ORUs. Further information concerning the ORUs may be obtained from the Office of Research Development and Administration. See inside back cover for address.

Center for Chicano Studies

The **Center for Chicano Studies** conducts interdisciplinary and multidisciplinary research on the history and contemporary condition of the Chicano population, contributes to the development of study programs, internships, and teaching methods, and organizes programs of public and University service to the Chicano and the larger community. Center projects are funded from intramural and extramural sources and involved faculty, students, staff, and community groups and organizations. Projects relating to public policy are of particular interest.

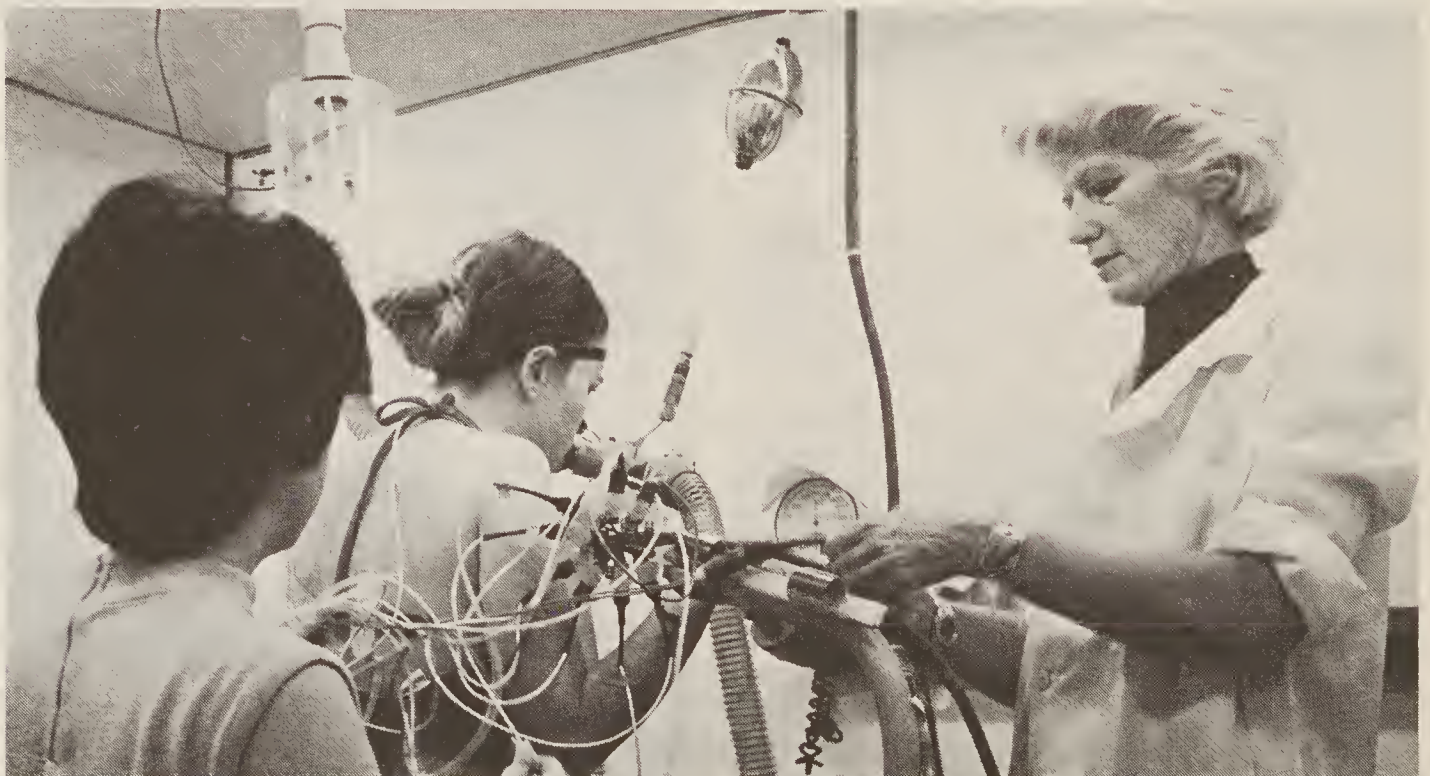
Community and Organization Research Institute (CORI)

The **Community and Organization Research Institute** conducts basic interdisciplinary research on societal problems of the local, national,

and international community. The Institute manages an internship training program leading toward the M.A. in Economics. This program, involving faculty, graduate students, and members of the larger community, seeks to generate information which will improve the process by which policy decisions are made. Other areas of current research interest include a Public Historian Program, a study of the effectiveness of competition for timber in the Pacific Northwest, responses of local governments in providing safety from the effects of seismic disturbances, study of the effects of price controls on petroleum product prices, research into the effectiveness of alternatives in crime control, and research into peri-natal medical care. Seminars and symposia are also sponsored on areas of special interest.

Computer Systems Laboratory (CSL)

The **Computer Systems Laboratory** was established as a focal point for computer research. It operates and maintains a PDP 11/45 computer system and a wide variety of specialized digital and analog equipment suitable for data acquisition and display. Research is underway in areas which have significant dependence on computers and digital technology. These include signal and image processing, surface climate modeling, computer science, artificial intelligence, ancillary systems for the handicapped, and computer assisted instructional systems.



Dr. Barbara Drinkwater, research physiologist at the Institute of Environmental Stress, checks equipment used for testing reactions to the stress of working in extremely high heat.



Institute for the Interdisciplinary Applications of Algebra and Combinatorics (AI)

The **Algebra Institute** is devoted to research in the field of applied algebra and discrete mathematics and their interactions with other disciplines, such as the biological sciences, economics, psychology, physics, statistics, and sociology. The Institute sponsors colloquium lectures by distinguished visiting specialists, research conferences, and seminars. The editorial offices of the international research journal, *Linear and Multilinear Algebra*, are housed in the Institute offices. Members of the Institute have designed and assembled a computerized Linear Algebra Bibliography, covering advances in the field over approximately the last forty years, which permits quick literature searches. A Microcomputer Laboratory for curriculum development and implementation is situated in the Institute.

Institute of Environmental Stress (IES)

The **Institute of Environmental Stress** is concerned with those fields that relate human function to the complex and changing environments to which humans and other organisms are continuously exposed. Its primary purpose is to further fundamental research of an interdisciplinary nature towards an understanding of the adaptive potentials of organisms. It provides facilities and support for undergraduate, graduate, and postdoctoral research. The areas of research covered involve not only the external environmental stresses but also the aging process, exercise, cardio-respiratory diseases, biomedical engineering, and neurophysiology. The disciplines involved in Institute activities come from the biological, medical, behavioral, and engineering sciences.

Intercampus Institute for Research at Particle Accelerators (IRPA)

The **Intercampus Institute for Research at Particle Accelerators** serves to unite the efforts of high-energy experimental physics groups at the Santa Barbara, San Diego, and Davis campuses of the University of California. As experiments in this field at the frontier of basic physics become more complex and expensive, it is necessary to combine the efforts of several groups in order to perform them. The first joint effort of the Institute has resulted in a successful proposal to build one of the initial facilities to do experiments at the new PEP accelerator, which will come into operation at the Stanford Linear Accelerator Center (SLAC) in

1980. Construction of apparatus is underway at the three campuses and at the SLAC, where Institute staff members will provide operational continuity and assistance to visiting Institute members from the campuses. During 1980 the experiment will be set up and the data will begin at PEP.

Marine Science Institute (MSI)

The Marine Science Institute assists and encourages faculty, professional researchers, and students in marine research. The MSI administers research projects involving faculty and graduate students from ten disciplines. Much of the research activity focuses on the resources of the California coast, although the diverse background and interests of the principal investigators have led to investigations widely dispersed through the world. Marine activities in the biological and geological sciences presently predominate, but there is increasing involvement of researchers from other disciplines.

Quantum Institute (QI)

The **Quantum Institute** is a problem-oriented research unit emphasizing the study of the interactions of electromagnetic radiation with matter. Disciplines involved include biology, chemistry, engineering, geology and physics. Research projects on surface science, combustion, earth strain, chemical lasers, and on molecular, solid state, and surface spectroscopy are in progress. The Quantum Institute encourages the collaboration of faculty and students from various departments, and welcomes the participation of visiting scholars from the national and international scientific community.

Social Process Research Institute (SPRI)

The **Social Process Research Institute** is involved in many areas of policy-related and basic research, especially in the social sciences. Topics studied include behavior modification, especially as applied to autism; evaluation research, including program evaluation methodologies; educational research, including international and bilingual education; mental health studies, including family and minority group studies; studies in anthropology and psychology. SPRI provides administration for the UCSB Office of Public Archaeology, a group of faculty and graduate students providing archaeological data assessment and recovery services to Federal, State and private agencies. SPRI also administers research for the Group for Research on Social Policy, social science faculty and graduate students doing applied social science and program evaluation.

A11 Affiliated Units

Center for Black Studies

The **Center for Black Studies** conducts research into the social, historical, political, and economic forces which have affected African people throughout the world, and their response to those forces. The Center also sponsors a faculty development program which offers research fellowships to doctoral candidates. These fellowships provide additional experience in research or half-time teaching assignments in academic departments. Half-time positions are also allocated to graduate students as research assistants. The Center also offers a variety of support services to the Santa Barbara community.

The Robert Maynard Hutchins Center

The Robert Maynard Hutchins Center for the Study of Democratic Institutions began its affiliated relationship with UCSB in July, 1979.

Long recognized for being among the first and most distinguished intellectual "think-tanks" in the country, the Center was established in 1959. From the beginning its purpose has been to examine and clarify the basic issues facing American society.

The activities of the Center include its regular program of dialogue sessions, conferences, research projects, and publications. *The Center Magazine* circulates to a membership of close to 30,000. Other products of the Center's work are disseminated through occasional papers, monographs, and other publications.

Participants in the dialogue sessions include persons from academic and nonacademic walks of life: educators, representatives of the professions, persons in positions of responsibility in government, political leaders, writers, public policy makers, and those who prefer to call themselves private citizens. Through a deliberative and disciplined discussion process, an ongoing attempt is made to bring clarity to society's most pressing problems.

With UCSB sponsorship, the Center has been relocated on the campus (Building 446), and renamed in honor of its founder.

Institute for Theoretical Physics

The National Institute for Theoretical Physics, which started operations in September 1979 in Ellison Hall on the UCSB campus, represents a new concept in theoretical physics research. The Institute, which is being funded for five years at approximately \$1 million a year by the National Science Foundation, will bring together physicists from all over the world to collaborate on problem areas which cut across traditional subfield lines. The solution of these problems will require the coordinated research efforts of groups of theorists from

different subfields of physics. Researchers ranging from full professors to postdoctoral members will average about 30 at any given time. The Institute, under its director Walter Kohn, is expected to become one of the major centers of theoretical physics in the world.



Valentine Eastern Sierra Reserve



A12 Natural Land and Water Reserves System (NLWRS)

The University of California administers some 25 natural reserves throughout the state. The Santa Barbara campus has responsibility for four. The Natural Land and Water Reserves System was founded in order to preserve "plant and animal communities, geologic and soil features, and fresh- and salt-water areas that are relatively free of the influence of man."

These areas are available to students and faculty for teaching and research in outdoor laboratories and classrooms representative of the major types of natural habitats found in California. The units are administered by the Marine Science Institute, where all inquiries as to their utilization should be directed.

Carpinteria Salt Marsh Reserve

The **Carpinteria Salt Marsh Reserve** includes most of an estuary that contains about 230 acres. Most of the streams of the Carpinteria watershed drain into the estuary. The dominant habitat consists of mudflats covered with pickleweed. The reserve itself is relatively undisturbed, but the surrounding area is developed intensely. As one of the few remaining estuaries in Southern California, it is an important habitat for certain plants, invertebrates, fishes and water birds. There are no facilities at the reserve, but the UCSB campus is only 20 miles away. Access to the reserve is restricted and guidelines for its use are being developed. Inquiries should be addressed to the UCSB Marine Science Institute.

Coal Oil Point Natural Reserve

The **Coal Oil Point Natural Reserve** contains one of the few stretches of coastal sand dunes in Santa Barbara County remaining in a relatively natural state. A number of plant and animal species especially adapted to sand dunes are found in the reserve, which is bordered by a large estuary. The reserve is the site for classes and research projects. In order to preserve the dunes, access is restricted; however, requests to visit the reserve for teaching or research purposes are usually honored. Inquiries should be addressed to the UCSB Marine Science Institute.

Santa Cruz Island Reserve

The **Santa Cruz Island Reserve** includes most of Santa Cruz Island, one of the Santa Barbara Channel Islands. It provides an isolated, unique environment for student and faculty research in anthropology, biology, geology, and geography.

The SCIR Field Station can accommodate up to twenty people. Inquiries regarding permission, fees, and transportation between the island and the mainland should be addressed to the UCSB Marine Science Institute.

Valentine Eastern Sierra Reserve

The **Valentine Eastern Sierra Reserve** includes two separate facilities, Valentine Camp and the Sierra Nevada Aquatic Research Laboratory (SNARL).

Valentine Camp is located near the community of Mammoth Lakes at an elevation of 8,100 feet. Within its boundaries are small but nearly undisturbed examples of Sierran upper montane forest, high montane chaparral, Great Basin sagebrush, montane meadow, and streambank habitats. Accommodations are available for researchers and small classes from late spring through early fall, depending on snow conditions.

The Sierra Nevada Aquatic Research Laboratory is situated on Convict Creek about 35 miles northwest of Bishop, at an elevation of 7,100 feet. The site includes streambank and sagebrush habitats, natural and artificial stream channels, fish ponds, and a small laboratory. Accommodations and laboratory bench space for researchers and small classes are available year round.

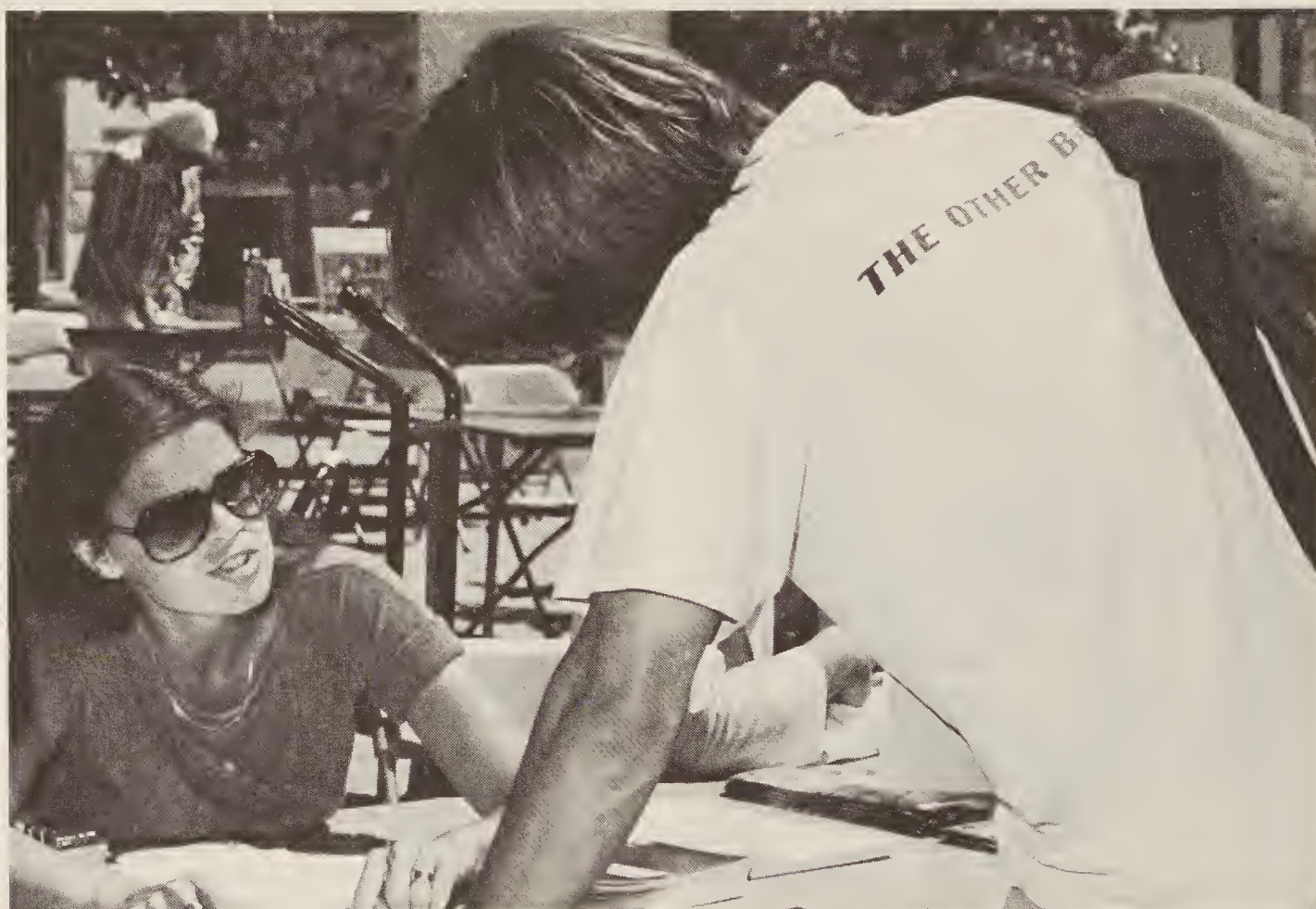
Inquiries should be addressed to the Marine Science Institute.

A13 Off-Campus Studies

The University offers off-campus, admissible students the opportunity to participate in a variety of regular degree programs offered on a full or part-time basis at three remote sites in Santa Barbara and Ventura Counties. Courses leading to a Master of Science degree and to a Certificate Program in Electrical Engineering/Computer Science are offered at Vandenberg Air Force Base and at the Point Mugu Naval Air Station, while courses leading to baccalaureate degrees in fields such as Liberal Studies and Combination Social Sciences are given at the Ventura Learning Center. The latter, located in the city of Ventura, is a joint operation of UCSB and California State University, Northridge, with both institutions directing the operations of the Center, sharing its facilities, and offering complementary programs.

Assistance with admission and enrollment procedures, as well as pre-enrollment and academic counseling is provided at these three off-campus locations. For further information, contact the Off-Campus Studies Office at UCSB or the Ventura Learning Center.

Admission to the University



B1 Undergraduate admission

The Office of Admissions and Relations with Schools invites prospective students to visit the campus and to discuss eligibility requirements for admission to the University of California. The office provides information about academic majors on this campus, helps plan programs of study for transfer students, and conducts tours of the campus. Written inquiries may be addressed to the Office of Relations with Schools. See inside back cover for the address and telephone.

Persons not eligible for admission to the University are usually advised to attend a community college so as to take courses which will make them eligible for admission and which apply towards the requirements of the college or school of the University in which they wish to enroll. An admissions counselor would be pleased to assist in the selection of such courses for eventual transfer to UCSB.

The University's undergraduate admissions requirements are based on two principles: 1. The best predictor of success in the University is high scholarship in previous academic work. 2. The study of certain subjects in high school gives a student good preparation for University work and

reasonable freedom in choosing a special area of study.

Applying for admission

Application packets for undergraduate admissions are available from high school and community college counselors or from any University of California Admissions Office. Completed applications and related materials should be sent to: **Office of Admissions, Cheadle Hall 1210, University of California, Santa Barbara, CA. 93106.**

The opening dates, as well as admission requirements, are the same for all UC campuses. Each campus will accept for consideration all applications filed during the first month of the filing periods. After the first month, specific departments and/or campuses may close to new applicants as their enrollment quotas are met. Early applicants have a better chance of being admitted to the campus of their first choice. Once quotas have been filled, additional applications cannot be accepted and will be forwarded instead to the students' second or third choice UC campus where enrollment is still open.

Opening dates for application periods

Quarter applied for	Opening application date
Winter Quarter, 1981	July 1, 1980
Spring Quarter, 1981	October 1, 1980
Fall Quarter, 1981	November 1, 1980
Winter Quarter, 1982	July 1, 1981

Application fee

A nonrefundable fee of \$25 is charged for filing an application for admission. A check or money order made payable to The Regents of the University of California must be attached to the application form. Anyone who applies but who is not eligible, or anyone who is admitted and does not register, must submit a new application and pay this \$25 fee again when seeking admission at another time.

Transcripts

Applicants are responsible for requesting that the high schools from which they graduated and the colleges they have attended send official transcripts of their work promptly to the UCSB Office of Admissions. The preliminary transcript for an applicant to freshman standing should include, if possible, work in progress, and the final transcript should report on that work and include a statement of graduation. Advanced standing applicants and freshmen with college work must request transcripts from the graduating, or last attended, high school and from all colleges attended.

Summary of Application Procedures

1) Obtain application forms for the University either from the counseling office in your school or by writing to the Office of Admissions, Cheadle Hall 1210, University of California, Santa Barbara, CA 93106.

2) File application with UCSB, along with nonrefundable \$25 application fee. At the same time, arrange to have all necessary transcripts sent to UCSB.

Notification of Admission

The notification of admission will include a Statement of Intention to Register and a Statement of Legal Residence.

Applicants who intend to register must return both statements to the Admissions Office along with a non-refundable \$50 acceptance of admission fee. This fee is applied toward the University Registration Fee provided applicants register in the quarter to which they have been admitted.

B2 Admission as a freshman

A "freshman applicant" is one who has graduated from high school but who has not since enrolled during any regular session in any college-level institution, excluding the summer session immediately following high school graduation. Enrollment in a college-level summer session does not disqualify an applicant from freshman status.

Applicants who are California residents

The following requirements are for California residents only. See the Appendix section of this catalog for the legal definition of California residence. Non-residents see **B4** and international students see **B10** and **E** for discussion of applicable admission requirements.

There are three major requirements for admission as a freshman: 1) the **subject requirement**, concerning the subjects students must have taken in high school;

2) the **grade requirement**, concerning grades and averages in those required subjects, and

3) the **examination requirement**, concerning certain tests that must be taken before enrollment at UCSB.

1) Subject requirement

The following subject patterns are required for admission to UCSB. The ten to eleven units listed below are the only courses used in computing the grade point average for admission to the University. A year course in high school is equivalent to one credit/unit.

A—History - 1 year

One year of United States history or one-half year of U.S. history and one-half year of civics or American government.

B—English - 3 years (4 years, beginning with applicants for Fall, 1981)

Three years of English—composition, and/or literature, university preparatory in nature. Not more than one year course will be accepted from the ninth grade.

C—Mathematics - 2 years

Two years of mathematics—algebra, geometry, trigonometry, calculus, elementary functions, and mathematical analysis. Courses such as arithmetic and business mathematics are not accepted.

D—Laboratory Science - 1 year

A year course in one laboratory science, taken in the 10th, 11th or 12th grade.

E—Foreign Language - 2 years

Two years of one foreign language.

F—Advanced Course - 1 or 2 years

This requirement may be satisfied by one of the following:

1. Mathematics

A total of one year of advanced mathematics—intermediate algebra, trigonometry or other comparable mathematics courses.

2. Foreign Language

Either an additional year in the same language used for "E" above or two years of a second foreign language.

3. Science

A year course in any laboratory science completed subsequent to the laboratory science used for "D" above.

Prerequisites and Recommended Subjects

Certain preparatory subjects are recommended for various courses of study offered at UCSB. These subjects should prepare the student to pursue competently a chosen field of study at the University. Details of these recommendations can be found in the bulletin *Prerequisites and Recommended Subjects*, which may be obtained from your school's counselor.

Courses will be accepted for satisfaction of the subject requirement from California high schools only if they appear on a list of acceptable courses certified by the high school principal and submitted to the system wide Office of Academic Service. Courses completed out-of-state will be reviewed by the Office of Admissions to determine their acceptability for the subject requirements.

If one or more of the required subjects have not been completed, consult the Office of Admissions to learn of acceptable ways of removing these deficiencies, such as completing courses in summer session.

Applicants are encouraged to take additional elective courses which provide an excellent opportunity to strengthen their preparation for the University. Additional courses in mathematics are essential in the preparation for majors in engineering, mathematics, the sciences and many other fields of study. A fourth year of English, including composition skills, is highly recommended for all students—and will be required of all applicants for Fall 1981 and succeeding quarters.

2) Grade requirement

A minimum of a C grade must be earned in each of the courses required for admission. If the grade-point average of the above courses taken after the ninth grade is 3.30 or better the applicant will be eligible for admission regardless of the scores on the standardized test. Those applicants with a grade-point average below 3.30 but greater than 2.77 will be admitted to the University if they achieve at least the specified scores on the standardized test(s). (See Eligibility Index.)

Grades received in courses taken in the ninth grade or earlier are not used in determining the grade point average, although *subject requirements* (except laboratory science) may be satisfied with a grade of C or better in these courses.

Up to a total of two semester courses in which a grade of D or lower was received may be repeated to meet the subject and grade requirements.

However, the grades earned in repeated courses will not be counted higher than a C in determining the overall average.



3) Examination requirement

All freshman applicants must submit test scores as described below. Applicants to the Fall quarter should take the tests as soon as possible in the senior year. Some may even choose to take them as early as the junior year. The following tests are required:

1. One Aptitude Test Either *A. The Scholastic Aptitude Test* — SAT — (the verbal and mathematics scores submitted from this test must be from the same sitting); or *B. The American College Test* — ACT — composite score

2. Three College Entrance Examination Board Achievement Tests, which must include (a) English Composition or English Essay, (b) one from among the social studies or foreign languages, and (c) mathematics (level 1 or 2).

Test dates and further information can be obtained from high school counselors or from the Educational Testing Service, P.O. Box 1025, Berkeley, CA 94701 or P.O. Box 592, Princeton, NJ 08540 or the American College Testing Program, P.O. Box 162, Iowa City, IA 52240.

High School Proficiency Examination

The University of California will accept the Certificate of Proficiency awarded by the California Department of Education upon successful completion of the California High School Proficiency Examination in lieu of the regular high school diploma, provided all other University entrance requirements

are met. The date of certification will replace the date of high school graduation in University records.

University of California Eligibility Index

A-F GPA	ACT* Composite	SAT** Total
2.78	35	1600
2.79	35	1580
2.80	34	1550
2.81	34	1530
2.82	33	1510
2.83	33	1480
2.84	33	1460
2.85	32	1440
2.86	32	1410
2.87	32	1390
2.88	31	1370
2.89	31	1340
2.90	30	1320
2.91	30	1300
2.92	29	1270
2.93	29	1250
2.94	28	1230
2.95	28	1200
2.96	27	1180
2.97	27	1160
2.98	26	1130
2.99	26	1110
3.00	25	1090
3.01	25	1060
3.02	24	1040
3.03	24	1020
3.04	23	990
3.05	22	970
3.06	21	950
3.07	21	920
3.08	20	900
3.09	19	880
3.10	18	850
3.11	18	830
3.12	17	810
3.13	16	780
3.14	15	760
3.15	14	740
3.16	14	710
3.17	13	690
3.18	12	670
3.19	11	640
3.20	10	620
3.21	9	600
3.22	9	570
3.23	8	550
3.24	8	530
3.25	7	500
3.26	7	480
3.27	6	460
3.28	6	430
3.29	5	410
3.30	5	400

* ACT is scored intervals of 1 point from a minimum of 1 to 35 maximum.

**SAT is scored in intervals of 10 points from a minimum of 400 to 1600 maximum.

Admission by examination alone

Applicants who do not meet the scholarship and/or subject requirements for admission and have completed fewer than twelve transferable college units since high school graduation may qualify for admission by examination alone. The same pattern of CEEB tests is required as above. CEEB tests cannot be taken in academic subjects covered in any completed transferable college courses. The required minimum total score on the Scholastic Aptitude Test (SAT) is 1,100. The required score on the three Achievement Tests is 1,650 or higher, with a minimum of 500 on each test.

B3 Admission to advanced standing

An advanced standing applicant is any high school graduate who has registered at and completed units in another college or university, or in college-level extension classes other than a summer session immediately following high school graduation. An advanced standing applicant may not ignore a college record and apply for admission as a freshman.



More people are returning to school through re-entry programs.

Applicants who are California residents

The requirements below apply only to California residents. Nonresident applicants should refer to **B4** and international students should see **E** for applicable admission requirements. The legal definition of a California resident may be found in the appendix to this catalog.

Advanced standing requirements vary according to the applicant's high school record. Admission requirements for freshmen applicants were changed for the Fall of 1979 to include a combination of high school grades and examinations. (See Eligibility Index). High school eligibility for advanced standing applicants up to at least Spring of 1981 will be determined by either the new or the old requirements, whichever is appropriate or beneficial to the applicant. For this reason, high school transcripts must be sent. Applicants who have completed fewer than 12 quarter or semester units of transferable college credit since high school graduation must satisfy the Examination Requirement for freshman. See item 3 in **B2** concerning Examination Requirements.

The transcript submitted from the last college attended must show, as a minimum, that the applicant was in good standing and had a cumulative grade point average of 2.0 (C) or better. If the grade point average fell below 2.0 at any college attended, additional requirements must be met in order to qualify the applicant for admission. Contact the Office of Admissions for further information.

In addition, applicants must meet at least one of the following three conditions:

1) Applicants who were eligible for admission to the University as freshmen may be admitted in advanced standing any time after they have established an overall grade point average of 2.0 or better in another college or university.

2) Applicants who were not eligible for admission as freshmen only because they lacked one or more of the required high school subjects may be admitted if they: a) have completed, with a grade of C or better, appropriate college courses in the missing high school subjects; b) have established an overall grade point average of 2.0 or better in all transferable courses; c) have completed 12 or more quarter or semester units of transferable courses after high school graduation or successfully passed the CEEB tests required for freshman applicants.

Applicants who choose not to make up all subject deficiencies may become eligible for advanced standing admission by meeting condition 3.

3) Applicants who were ineligible for admission to the University as freshmen because of low grades, lack of required subjects or a combination of both, may be admitted after earning a grade point average of 2.4 or better in at least 84 quarter or 56 semester units of college credits accepted by the University for transfer. Additionally, excess high school subject omissions must be satisfied by completion of appropriate college courses with a grade of 'C' or better.

B4 Admission of nonresidents

Nonresident admission requirements for freshmen

1) The same subject pattern given for California residents in **B2** is required. The legal definition of California residency may be found in the appendix to this catalog.

2) The grade requirements for California residents also apply to nonresident applicants with the special provision that nonresident applicants must have maintained a grade point average of 3.4 or higher in the required high school subjects.

3) The examination requirement consists of the same pattern of tests given for California residents in **B2**. Scores will be used only for counseling, placement, and when possible, in satisfaction of the Subject A: English composition requirement. See **H2** and **N** for more information concerning Subject A: English composition.

4) Admission by examination alone is the same as for California residents except that the nonresident applicant's scores on the three Achievement Tests must total at least 1,730 with no score less than 500.



Nonresident admission requirements for advanced standing

A nonresident advanced standing applicant must meet the admission requirements for freshman admission and must have a grade point average of 2.8 or higher in college courses that are accepted by the University for transfer credit.

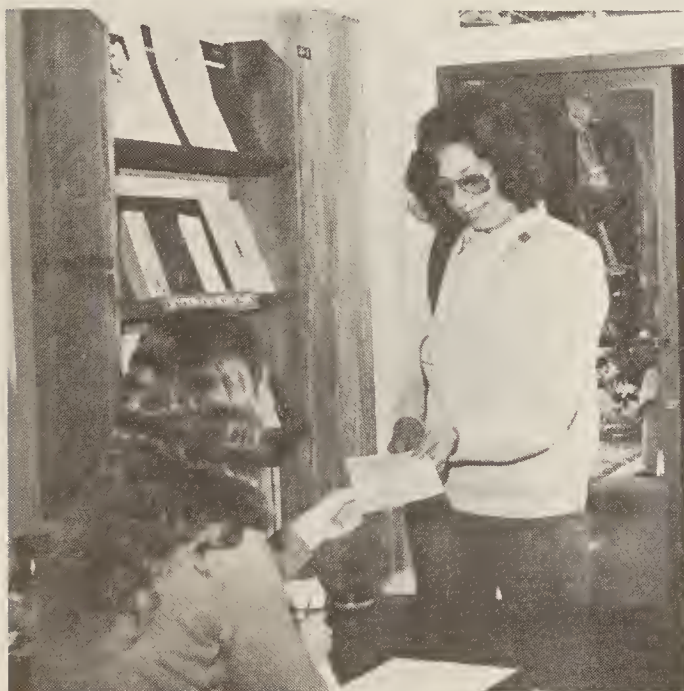
If a nonresident applicant lacks any of the required high school subjects, college courses in those subjects must be completed with a grade of

C or higher. A non-resident applicant who graduated from high school with less than a 3.4 grade point average in the subjects required for freshman admission must complete at least 84 quarter or 56 semester units of transferable work with a grade point average of 2.8 or higher. Upon successful completion of that work two units of the required high school subjects may be waived.

B5 Additional information

Deferred admission

Applicants for undergraduate admission who have accepted admission to UC Santa Barbara but are unable to attend for valid reasons other than attendance at another institution, may request a deferment of admission to a subsequent quarter by writing to the Admissions Office. This request must be received three weeks prior to the start of the quarter to which they have accepted admission.



Credit from another college

The University gives unit credit to transfer students for courses successfully completed at other accredited colleges and universities, including some extension courses. See **G4** for information concerning University Extension. To be accepted for credit, the courses must be comparable to those offered at the University as determined by the Office of Admissions.

The University accepts, at full unit value, approved transfer courses completed with satisfactory grades in accredited community (two-year) colleges. A student may earn 105 quarter (70 semester) units towards a University degree at a community college. Refer to **M-4** for further limitations on the acceptability of courses taken in the community colleges for students in the College of Letters

and Science at UCSB. Subject credit for transferable courses in excess of those units will be granted.

B6 Limited status

Limited status permits individuals with bachelor's degrees to enroll in additional undergraduate courses at UCSB for a definite and limited objective. These courses may be taken as prerequisites for admission to graduate and professional school here and elsewhere, or simply for personal fulfillment. However, students in limited status may not enroll in graduate courses, nor may they apply courses completed in limited status to graduate programs at UCSB.

The Director of Admissions and the dean of the college in which the applicant plans to enroll must approve admission to limited status, and the conditions for such status, such as duration of study, prescribed courses, and the minimum grade point average to be maintained. Admission is usually granted only to those whose previous academic record indicates promise of success in the area to be studied. Unless otherwise specified, limited status remains valid from the quarter of admission through the last quarter of that academic year. Subsequent study on limited status requires a new application.

B7 Second baccalaureate

Though most individuals with bachelor's degrees who wish to return to undergraduate study choose limited status, a few find that completion of a new major and degree is desirable or necessary. They may apply for admission to second baccalaureate status.

Admission is subject to the approval of the Director of Admissions and the dean of the college in which the applicant plans to enroll and is based primarily upon the applicant's academic record and promise of success in the newly chosen field. This field must be substantially different from that of the first degree.

B8 Intercampus transfer

Undergraduates who are or who have been registered in a regular session of any campus of the University of California may apply for an intercampus transfer to another UC campus provided they have not been registered subsequently in a regular term at another collegiate institution. **G7** contains additional information concerning intercampus transfer. Further information is also available from the Registrar. Intercampus transfer applications are available from and must be returned to the Registrar of the campus where the applicant is or was registered. A \$25 non-refundable application fee is required for inter-campus transfer.

Students who have completed course work elsewhere since leaving the UC system must apply for advanced standing admission to the new campus

of their choice. They are no longer eligible for inter-campus transfer.

The deadline for filing (closing date) an inter-campus transfer application will vary. Each campus closes to applicants as soon as enrollment quotas are met in each major department or college.

B9 Graduate status

Students holding a bachelor's degree or its equivalent from an accredited institution of recognized standing are eligible for consideration for admission to UCSB's graduate status. See **I** for further information concerning requirements for admission to graduate status.

Application forms, which can be obtained from the major department or the Graduate Division, must be submitted with a nonrefundable \$20 fee. An applicant must also arrange to have two copies of transcripts from each college attended and letters of recommendation sent directly to the Graduate Division. Notification of acceptance or nonacceptance will be sent by the Graduate Division after review by the department and the Graduate Dean.

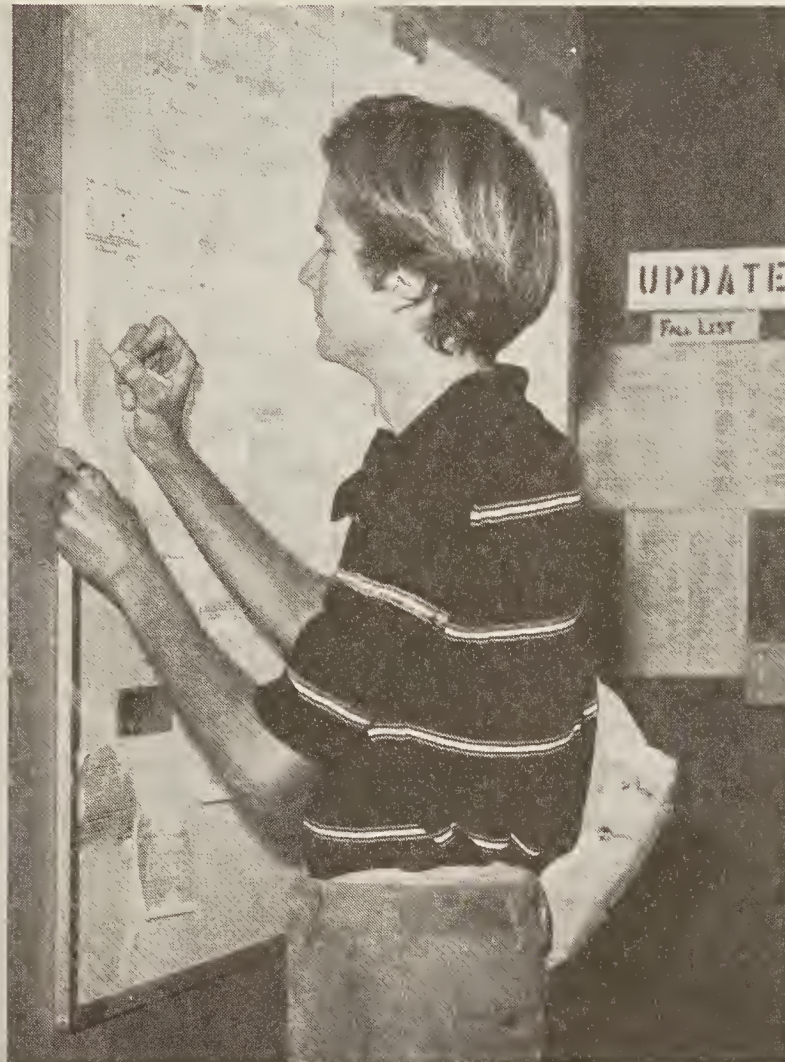
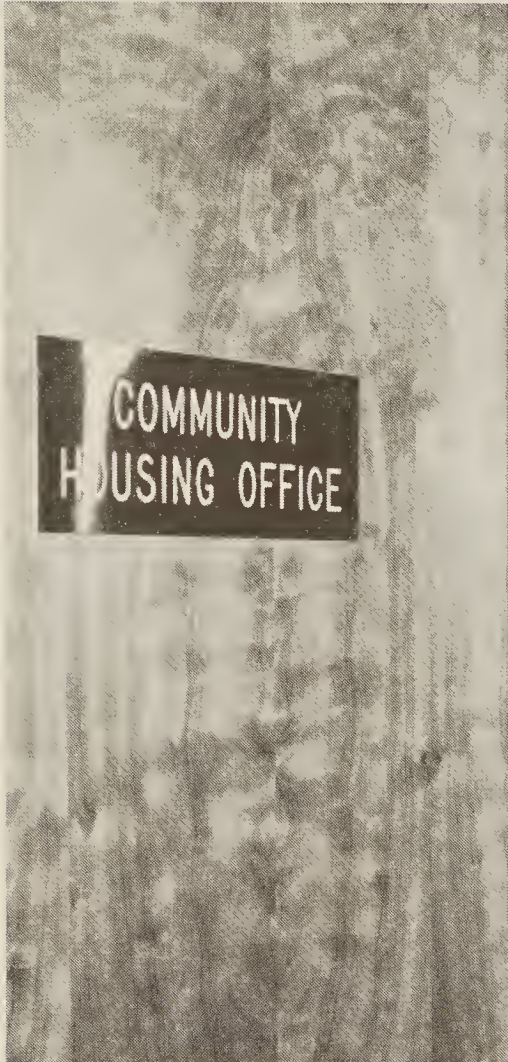
Students who do not desire to become candidates for higher degrees, but who wish to enroll in

the Graduate Division must meet the same requirements as those who are prospective candidates for degrees. They must be admitted to specific fields of study and must satisfy the Dean that their programs have definite scholarly or professional purposes.

B10 Applicants from other countries

The record of an applicant from another country either for graduate or undergraduate standing is evaluated in accordance with the general rules governing admission. An application form, official certificates, and detailed transcripts should be submitted to the Office of Admissions or the Graduate Division well in advance of the quarter for which admission is desired. Applicants for graduate standing must submit in duplicate letters of recommendation, TOEFL scores, and any other materials required by the program of interest. One set should be sent to the Graduate Division and the other to the Graduate Advisor of the intended graduate major. Early filing of the application will allow time for exchange of correspondence and, upon admission, for obtaining the required passport and visa. Detailed information concerning applicants from other countries is contained in **E**.

Fees, Expenses, and Financial Aid



C1 Fees and expenses

The following information indicates the basic expenses common to all students at UCSB. Students classified as nonresidents must pay an additional tuition fee of \$800.00 per quarter. (See the Appendix section of this Catalog for the nonresident tuition fee statement.)

At the time of registration each quarter, every student must pay the following fees. **These fees are current as of the publication deadline for this catalog but are subject to revision by The Regents of the University of California.** Detailed information on fees is contained in *Student Fees and Deposits*, available from the Cashier's Office. See inside back cover for address.

During the academic year 1980-81 a new accounts receivable system will be adopted intended to simplify the payment of fees and the collection of financial aid. Students are advised to watch the quarterly Schedule of Classes for details regarding this new system.

	Undergraduate Students	Graduate Students
University registration fee	\$137.00	\$137.00
Educational fee	100.00	120.00
Associated Student fee	14.00	
Graduate Students Association fee		2.50
University Center fee	6.00	6.00
Transit System fee	4.20	4.20
Accident & Health insurance fee	77.00	77.00
(for winter & spring only, \$58.00 for spring only, \$37.00)		
Total for California residents	\$338.20	\$346.70
Tuition for nonresidents	\$800.00	\$800.00
Total for nonresidents	\$1138.20	\$1146.70

Each quarter, newly admitted students are notified of fee payment deadlines. These deadlines are also listed in the *Schedule of Classes*, published quarterly. Fees may be paid at the Cashier's Office or by mail with a money order, cashier's check or personal check in the exact amount made payable to The Regents of the University of California, and mailed to the Cashier's Office. (See inside back cover for address.) Students should indicate their full legal name and alpha number on the check or by separate letter accompanying the payment. The alpha number is the code number assigned upon return of the Statement of Intention to Register.

Total expenses

The exact cost of attending the University of California, Santa Barbara, will vary according to personal tastes and financial resources. It is possible to live simply and to participate in the life of the student community on a limited budget. Generally the total expense for three quarters will average about \$3,810.00 for residents of California and \$5,715.00 for nonresidents, including international students. Books and supplies may range from \$150 to \$225 per academic year, depending upon the student's academic program; the average is estimated to be about \$210. Personal expenses, including clothes, laundry, cleaning, recreation, and transportation, may range from \$400 to \$800 per year, the average being approximately \$640.

Information concerning housing costs and meals both for on-campus residents and for students who live off campus is contained in **C4** and **C5**.

C2 Explanation of fees

Accident and sickness insurance plan

UCSB sponsors an accident and sickness insurance plan. All nonimmigrant international students, regardless of other health insurance they may have, and all other students who are not covered by another health insurance policy are required to participate in this plan.

The fee is \$77.00 for 12 months of coverage, \$58.00 for nine months (beginning winter quarter), and \$37.00 for six months (beginning spring quarter). Payment is made at the same time other fees are paid. These fees could be subject to change.

This insurance plan provides for certain medical services not provided by the Student Health Service. Further information and descriptive brochures may be obtained from the Student Insurance Counseling Office, Student Health Service Building, across from Rm-1708-F (Medical Records). See **D3** for additional information regarding the Student Health Service.

Application fee

Every applicant for admission must pay a fee of \$20 with the application. This fee is nonrefundable

and may be paid by bank draft or money order, payable to The Regents of the University of California. This fee will be raised to \$25 effective the Fall Quarter of 1981.

Associated Student fee

The Associated Student membership fee is \$14.00 per quarter and is paid by undergraduates at the time of registration. See **D6** regarding the Associated Students.

Deposit fee

A nonrefundable \$50.00 deposit is required of undergraduates when returning the Statement of Intention to Register (SIR) at UCSB. This deposit will be applied to the registration fee only if students register in the quarter for which they have been admitted. This deposit fee does not apply to graduate students.

Educational fee

The educational fee is paid by all students registered at UCSB to cover a variety of educational costs as determined by The Regents. California resident students with demonstrated financial need may defer payment of the educational fee by accepting an obligation to repay the deferred sum after completion of their higher education. This deferment provision applies only to the educational fee and not to the other fees assessed by the University. Students interested in this provision may obtain further information from the Office of Financial Aid.

Undergraduates who have permission to take 8 1/2 or fewer units are eligible for a \$50.00 reduction of their educational fee. The end of the third week of classes is the final date for determining such eligibility. Fee reduction waiver forms may be obtained from the Registrar prior to payment of fees. Refunds cannot be made if a student's program falls below nine units after the determination date. Students who exceed 8 1/2 units will be assessed full fees. (See **G2** and **M2** for further information on part-time studies.)

Graduate filing fee

A fee of \$58.00 has been established in certain situations for the filing of a master's thesis, and/or the formal final examination for the master's degree. See **I-2** regarding this filing fee.

Graduate Students Association fee

All graduate students are assessed a fee of \$2.50 for the Graduate Students Association.

Intercampus transfer fee

Undergraduate students wishing to transfer from one UC campus to another must pay \$20.00 with

the transfer application. This fee will be raised to \$25 effective the Fall Quarter, 1981.

Nonresident tuition fee

Students who have not been legal residents of California for the established time period are classified as nonresidents and are subject to payment of a non-resident tuition fee of \$800.00 per quarter. Students entering the University for the first time are advised to read carefully the rules governing determination of residency as outlined in the Appendix to this catalog.

Newly admitted and returning students are required to file a new Statement of Legal Residence. Questions concerning residency classification may be referred to the deputy of the Attorney in Residence Matters in the Office of the Registrar.

Readmission fee

A fee of \$20.00 is required when submitting an application for readmission. Applications for undergraduates are made to the Registrar, for graduate students to the Graduate Division Office. This fee will be raised to \$25 effective Fall Quarter, 1981.

Registration fee

The registration fee is \$137.00 per quarter both for undergraduate and graduate students. This fee covers certain student expenses for athletic and gymnasium facilities and equipment, lockers, laboratory and course fees, counseling and placement services, and medical advice, hospital care or dispensary treatment furnished by the Student Health Service. This fee is charged whether or not students make use of these services.

University Center building fee

All students are assessed a University Center fee of \$6.00 per quarter. This fee is used to repay construction loans for the University Center (UCen).

All students enrolled in 5 1/2 units or less are eligible for a full waiver or refund of this fee. Waivers may be obtained from the Registrar prior to payment of fees. The end of the third week of classes is the final date for determining eligibility. Refunds will not be made if a student's program falls below 6 units after this date. Students who exceed 5 1/2 units will be assessed the fee.

Vehicle fees

All vehicles must be registered with the Parking Services Office. On-campus parking spaces are available on a first come, first served basis in lots designated by the type of parking permit held. Undergraduate students living off-campus within one mile of the campus boundary are ineligible for parking permits for automobiles or motorcycles. Permit holders, students, faculty, and staff who purchase daily permits may not use visitor parking

zones. Parking regulations and fees are subject to revision. Special medical parking spaces and permits are available for students whose disabilities require them to have special parking arrangements.

Parking spaces are becoming increasingly scarce and alternate sources of transportation, such as car pools, bus service, and bicycles should be used whenever possible. Complete information about parking and vehicle operation may be obtained from the Parking Services Office, Bldg. 512. Traffic and parking violators are cited to the Municipal Court.



Parking fees

Auto	\$48.00 per year, \$13.00 per quarter – students only
Second Car	\$1.00 per car for those eligible
Summer Session only	\$10.00
Daily permit	50¢ per day
Motorcycles	\$10.00 per year

C3 Refunds

Claims for refund of fees must be presented during the fiscal year in which the fees were paid. Receipts issued for all payments must be retained since refunds are made only upon return of the original receipt.

Procedure

New undergraduate students who withdraw prior to the first day of instruction will receive refunds in full except for the \$50 Nonrefundable Deposit. All continuing and readmitted students and new graduate students must pay a service charge of \$10.00 for cancellation of registration or withdrawal before the first day of instruction. After the first day of instruction the Schedule of Refunds is applied to the total of fees assessed except the Transit System Fee. On or after the first day of instruction, the following schedule of refunds is applied to the balance of fees paid:

Schedule of Refunds

1-14 days	15-21 days	22-28 days	29-35 days	36 days and over
80%	60%	40%	20%	0%

The schedule of refunds refers to calendar days, beginning with the first day of instruction. Percentages listed should be applied respectively to each fee. The effective date for determining a refund of fees is the date the student files official notice of withdrawal with the University. No University services will be provided to the student after that date.

If no course credit is received, a full refund of the Registration Fee for a regular session will be granted students entering the armed forces prior to the end of the sixth week of the quarter. No refund will be granted thereafter.

C4 Food services

Three dining commons are located on the UCSB campus near the residence halls: De la Guerra, Ortega, and Carrillo. Students who live on campus receive meal tickets to these commons as a part of their room and board contract. Students who live off campus may purchase meals in the campus dining commons either through a quarterly contract or on an individual meal basis. Arrangements may be made through the Food Services Office, Room 1501. There is a cafeteria in the UCen which is open from 7:30 a.m. to 7:30 p.m. on weekdays, and several smaller snack bars which are open at various hours.

C5 Housing

Students attending the University of California, Santa Barbara, have a wide variety of housing from which to choose, ranging from University-owned campus residence halls, single student apartments and family student apartments to off-campus, privately-owned residence halls, apartments, duplexes, rooms, houses, fraternities, sororities, and a housing co-operative.

Residence Halls

There are six coeducational residence halls on the UCSB campus accommodating 2,600 students: Anacapa, San Nicolas, San Miguel, San Rafael, Santa Cruz, and Santa Rosa. Most rooms in these halls are for two students. Rooms are furnished with single beds, chests of drawers, chairs, bookcases and desks. All other furnishings, including linen, are supplied by the student. A limited number of rooms in the residence halls have been adapted to the needs of physically disabled students.

The double room rate for the 1979-80 academic year is \$1820 per student, including 20 meals a week. An additional fee of \$15 is assessed by the Residence Halls Association. These prices are subject to change.

Application forms for University residence halls will be provided after receipt of a student's application for admission. Returning an application does not guarantee housing on campus. Students who cannot be accommodated on campus will be assisted by the Community Housing office, Building 434, in finding suitable quarters off campus.

Single student apartments

A complex of 150 University-owned and operated furnished apartments for single upper division and graduate students is currently under construction, with an anticipated opening date of Fall,

1980. Most of the apartments are two bedroom, accommodating four students, but nine are one-bedroom apartments for one or two students. Fifteen of these apartments will meet the needs of physically disabled students. The apartments are located one-half mile west of the main campus. If four students share a two bedroom unit, rent is anticipated to be \$100 per month per student, plus gas and electricity.

Family student apartments

UCSB administers two apartment complexes near the main campus. The Storke Campus Apartments includes 300 units located one-half mile west of the main campus which rent for \$194 per month, including utilities. The West Campus Apartments include 250 units located one mile west of the campus which rent from \$140 to \$164 per month, including utilities. These apartments are unfurnished except for stove and refrigerator. Prices quoted are subject to change.

Occupants must be enrolled full time at UCSB: for undergraduates, a minimum of 12 units; for graduates, a minimum of four upper division or graduate units. Occupants must be married or be single parents with legal physical custody of a minor child. A certified copy of the marriage license, children's birth certificates and/or children's custody papers must be furnished when an apartment is offered. Vacancies are filled according to the date of application, and an average wait of 10-13 months can be anticipated. An additional unit of 42 two bedroom apartments will be constructed soon.

Brochures are available upon request describing University-owned housing. Contact the Residential Contracts Office, 1501 Residential Services, Building, University of California, Santa Barbara 93106.

Privately-owned housing

The Community Housing Office Bldg. 434 maintains listings of privately-owned accommodations in Isla Vista, Santa Barbara, and Goleta. These include room and board facilities, apartments, and both shared and individual housing accommodations, in a broad price range. Prices per person per academic year for private room and board facilities range from \$1885 to \$3000, and apartments range from \$900 to \$2250 per student per academic year.

Most student apartments are located in Isla Vista adjacent to the west edge of the campus, and most of the housing in Isla Vista is managed by rental agencies. Since there is a rush for apartments just before the beginning of a quarter, students should come to UCSB and make arrangements well before registration week. For fall, such arrangements should be made during the previous spring or summer. It is recommended that students make all the necessary living arrangements personally with the owner or manager rather than by mail. Since a contract is a legal agreement and the terms of a contract are binding, there should be a



clear understanding by both parties in writing of all terms of the contract. Isla Vista owners and managers included on the list compiled by the Community Housing Office agree to submit minor landlord/tenant disputes to a mediation board composed of students, landlord representatives and a member of the Community Housing Office.

Other living accommodations are available in Goleta, two miles from campus, and in Santa Barbara, ten miles from campus. Students with current registration cards may ride the local bus system at no charge during the fall, winter and spring quarters.

The Community Housing Office also maintains locator files and bulletin boards to help students communicate with and assist one another in finding apartments and compatible roommates or in subletting their apartments.

Sororities, fraternities and co-operatives

Sororities and fraternities own or lease houses or apartments near the campus and provide lodging and meals for their members. See **D7** for more information concerning sororities and fraternities.

The Student's Rochdale Housing Project, an apartment co-operative of apartments which students manage, contributing a few hours of work in exchange for a reduced rent, is located at 6520 Cervantes, Isla Vista, California 93017. Applications are available by contacting the Resident Manager at the above address or by telephoning (805) 968-3604.

Students with problems or questions regarding off-campus living accommodations may write to or visit the Community Housing Office, Building 434. See inside back cover for the address.

On-campus residence hall information (or information about Family Student Housing) is available through the Housing and Residential Services Office, 1501 Residential Services Building.

C6 Financial aid

Financial assistance in a variety of forms is available on an annual basis to qualified students. The forms of assistance include scholarships, loans, grants, and work-study.

Scholarships are awarded to entering and continuing undergraduates on a competitive basis. Primary consideration is given to academic ability, achievement, motivation, promise, and need.

Loans available to students are described in the following sections. Most are long-term, low-interest loans which must be repaid.

Grants are outright gifts which do not have to be repaid.

Work-study students may interview for jobs both on and off campus or may locate their own jobs with eligible employers. Employment may continue until the amount of work-study money awarded has been earned.

Parents and students are expected to make the maximum effort to cover college expenses, but students who would be unable to continue their education without supplemental resources will be given assistance according to their need to the extent of funds available. Need is determined according to the standards of the College Scholarship Service (CSS), an activity of the College Entrance Examination Board concerned with improving equal educational opportunity. The CSS through the determination of financial need assists in the equitable distribution of financial assistance to students.

Applications for all programs of financial aid must be supported by a confidential financial statement and the appropriate income tax return. Funds for financial aid are made available by the Federal Government, the State of California, the Board of Regents, various private organizations, and many interested individuals.

Filing dates

The following financial aid filing dates have been established for the academic year 1981-82;

February 11, 1981: Scholarship and summer work-study applicants must file by this date. All other applicants are strongly urged to do so by this date.

April 15, 1981: Priority deadline for those who wish to be given first consideration for available funds. Applications received after this date will be considered only for funds remaining when the financial requirements of those who applied by April 15 have been met.

July 1, 1981: Final application deadline for fall quarter, 1981.

December 1, 1981: Final application deadline for winter quarter, 1982.

March 1, 1982: Final application deadline for spring quarter, 1982.

One basic application, called the Student Aid Application for California (SAAC), if submitted to the College Scholarship Service (CSS) by February 11, entitles the qualified student to consideration for scholarships, summer work-study, and awards from the California Student Aid Commission. See C9 and C10 for instructions regarding mandatory California Student Aid Commission grants and the Basic Opportunity Grant. The SAAC may be obtained in the fall from high school and college counselors. It must be submitted as early as possible after January 1, 1981 to the College Scholarship Service, Box 70, Berkeley, CA 94701.

The Office of Financial Aid publishes an informative brochure which supplies detailed instructions,

requirements, and qualifications for financial assistance. This brochure can be obtained by writing to or visiting that office.

Awards are announced in May and June, and take the form of a "package" made up of a combination of scholarship, loan, grant, and work-study funds according to the needs of the applicant. Awards may be adjusted at any time upon notice of receipt of non-University or outside agency funds or any other resources not previously accounted for, including campus employment. Awards may also be increased during the year for a variety of reasons and depending upon availability of funds.

Applicants should not wait for notification of admission to the University to apply for financial aid. However, an offer of financial assistance does not imply or insure admission to the University.

Summary of financial aid application procedures

1) Obtain application forms, including the Student Aid Application for California (SAAC) from high school or college counselor or from the UCSB Office of Financial Aid.

2) Submit the SAAC to the College Scholarship Service, Box 70, Berkeley, CA 94701 after January 1 and before February 11 so as to be considered for scholarship assistance the following academic year or for summer work-study and for initial California Student Aid Commission grants. To receive priority consideration for all other funds, submit no later than April 15.

C7 Undergraduate scholarships

Undergraduate scholarships are awarded competitively on the basis of academic achievement and (with the exception of Regents and Chancellor's Honoraria) of need as determined by College Scholarship Service criteria and available funds. Students must reapply for scholarships every year.

Regents Scholarships

These awards are based solely on academic excellence and exceptional promise. Students are eligible to apply upon graduation from high school or completion of the college sophomore year. The term of appointment, subject to annual review, is four years for students entering from high school, and two years for college sophomores. Awards may be honorary in nature or may be accompanied by a stipend covering the scholar's need as determined by College Scholarship Service criteria. At the time of original appointment, Regents Scholars receive an honorarium of \$100, regardless of financial need. Regents Scholarship applicants not wishing to apply for a stipend need file only a Scholarship Data Sheet, available from the Office

of Financial Aid. A Student Aid Application for California (SAAC) is not required.

Chancellor's Scholarships

Students demonstrating high academic potential may be considered for a \$100 Honorarium which is given by the Chancellor of the University of California, Santa Barbara. Since outstanding academic potential is the only criterion for a Chancellor's award, students wishing to apply for this program need only submit a financial aid application and the required scholarship material.

Other scholarships

Other scholarships are awarded annually by the Chancellor to undergraduate students on the basis of need and high academic achievement. For the 1980-81 academic year, these awards range from \$100 to \$1,500 and may be supplemented by other forms of financial aid as required to meet the student's established need. The scholarships listed below are contributions made possible through the cooperation of individuals and private organizations. The local gifts and endowments are available to UCSB students only. The University-wide endowment funds are not all available each year at UCSB.

The Office of Financial Aid maintains an agency scholarship section which enables private individuals and outside agencies to distribute scholarship or loan funds to selected recipients.

Local Gifts and Endowments

Alumni Association (includes contributions from UCSB Alumni, Santa Maria Alumni Chapter, Residence Halls Association)
 Clarence Phelps Memorial Scholarship Fund
 California Congress of Parents and Teachers, Inc.
 John and Ina Therese Campbell Scholarship Fund
 Ralph W. Church Scholarship Fund
 Floralyn Cadwell Conway Scholarship Fund
 Olivia Long Converse Scholarship Fund
 John S. Edwards Scholarship Fund
 Faculty Women's Club Scholarship
 Hazel S. Lagerson Scholarships
 William C. and Florence W. Matthews Fund
 Kevin P. Moran Memorial Fund
 Samuel B. Mosher Scholarship Fund
 Hilda Oppenheimer Scholarship Fund
 Isabelle Price Memorial Scholarship Fund
 Arthur H. Tucker Scholarship Fund
 UCSB Foundation Scholarships
 UCSB Foundation, Parents Fund Scholarships
 Mildred Wright Memorial Scholarship
 (Soroptimists Club of Santa Barbara)

University-wide Endowment Funds

Sarah M. Armstrong Scholarship Fund
 Charles S. and Cora L. Ash Scholarship Fund
 Margaret H. Blaney Scholarship Fund

Marsley Buckley Scholarship Fund
 George and Marjorie Butler Scholarship Fund
 Kenneth and Florence Caldwell Scholarship Fund
 Caroline J. Clow Scholarship Fund
 William F. and Albertine C. Cordes Scholarship Fund
 Brython P. Davis Scholarship Fund
 Elizabeth Dineen Scholarship Fund
 Richard and Kate Faulkner Scholarship Fund
 Matilda Newsom Fowler Memorial Scholarship Fund
 Leon F. Goodman Scholarship Fund
 Gordon-Macneil Scholarship Fund
 Harriet M. Hauber Scholarship Fund
 Laura M. Hawkins Scholarship Fund
 William R. Hewlett Scholarship Fund
 Judge E. Coke Hill Scholarship Fund
 Erle Briggs Ingle Scholarship Fund
 Eva A. Josephi Scholarship Fund
 Anna Bell Karr Scholarship Fund
 William Adolph Kierski Scholarship Fund
 Edward F. Kraft Scholarship Fund
 Lakenan Scholarship Fund
 Walter Loewy Scholarship Fund
 Laura Mahan Scholarship Fund
 Frank McArthur Scholarship Fund
 Eugene and Harriet Meyer Scholarship Fund
 John A. W. Miller Scholarship Fund
 Oney McCutchan Nicely Scholarship Fund
 Arthur W. Nicholls Scholarship Fund
 LaVerne Noyes Scholarship Fund
 A. F. Nunes Scholarship Fund
 Ivy Douglas Ostrom Scholarship Fund
 Paulson Scholarship Fund
 Milton Phillips Scholarship Fund
 Mabel Wilson Richards Scholarship Fund
 Ellen C. Schwartz Scholarship Fund
 Werner R. Scott Scholarship Fund
 Otto W. Shaler Scholarship Fund
 William W. Stout Memorial Scholarship Fund
 Teale Memorial Scholarship Fund
 Herbert Tryon Scholarship Fund
 University Scholarship
 University Memorial Scholarship
 Frank and Carolan Walker Scholarship Fund
 Blanche G. Williams and Gertrude D. Graham Scholarship Fund
 Violet E. Wilson Scholarship Fund

C8 Graduate fellowships

Graduate students interested in UCSB graduate fellowship programs should consult the Graduate Division for information and applications. See inside back cover for address.

C9 Other financial aid

Other types of financial aid below are available to qualified graduate and undergraduate students according to established need and the application deadlines stated above. These programs include:

Alumni Association loans

Registered undergraduate and graduate students may borrow from loan funds provided by the Alumni Association. Two funds provide \$25 loans for a period of 45 days. A 25— administrative fee is charged. The only requirement for receiving such loans is a valid registration card.

Associated Student emergency grant

Through funds provided by the Associated Students, these small grants are made available to meet unexpected, unanticipated expenses. A student need not be a financial aid recipient to apply, but must be an enrolled undergraduate student. The Associated Students also provide funds for grants-in-aid to students with proven financial need.

Associated Student loans

Registered undergraduate students may borrow small sums on a short-term basis from the Associated Students. Applications should be made at the University Center Cashier's office located on the first floor of the University Center.

Basic Opportunity Grant (BOG)

This federally funded grant program provides financial assistance to those who need it to continue their education beyond high school.

All financial aid applicants who are enrolled in an undergraduate course of study and have not previously received a bachelor's degree must apply for a Basic Opportunity Grant. To be considered for a BOG, check the appropriate box on the Student Aid Application for California (SAAC). Other financial aid cannot replace BOG awards for which students fail to apply.

Educational fee deferment loan

The Educational Fee was established by the Regents in 1970. Students who are legal residents of the State of California and who have demonstrated financial need may defer payment of this fee by accepting an obligation to repay it after completing their higher education. Repayment terms are similar to those of the National Direct Student Loan, i.e., repayment at three percent interest beginning nine months after termination of enrollment.

Educational fee grant

The Regents have also provided funds with which eligible applicants may be awarded a maximum of \$100 per quarter for the first three consecutive quarters of attendance. To qualify, a student must be a resident of California and an undergraduate in the first three consecutive quarters of attendance at the University of California.

Emergency and short-term loans

Students in good standing who find themselves in a financial emergency should inquire at the Office of Financial Aid regarding short-term loans. Loans are available from the following funds:

Marvin M. Appel Scholarship Fund
California Federation of Women's Clubs Loan Fund
Mary L. Cheadle Emergency Loan Fund for Foreign Students
Lawrence E. Chenoweth Memorial Loan Fund
Erickson-Werner Memorial Loan Fund
David Gray, Jr. Loan Fund
Elias Hick and Edward Barnes Jones Foreign Students Loan Fund
Kiwanis Book Loan Fund
Willis Edwin Leonard Memorial Loan Fund
Los Rancheros Pobres Loan Fund
Steve McNally Memorial Loan Fund
Ednah Rich Morse Loan Fund
Upton S. Palmer Loan Fund
Dr. Paul Perigord Loan Fund
Pioneer Memorial Student Loan Fund
Isabelle Price Memorial Loan Fund
Regents Loan Fund
Santa Barbara County Federation of Women's Clubs Foreign Students Loan Fund
Santa Barbara Senior Loan Fund
Warren E. Schutt Memorial Loan Fund
Laura E. Settle California Retired Teachers Association Loan Fund
Jody Thoele Memorial Fund
John H. Tokuyama Memorial Loan Fund
UCSB Memorial Student Loan Fund
Diane Avery Memorial
Cathy Clay Memorial
California Congress of PTA
Kirk D. Phillips Memorial
Yves and Manon Surcouf Memorial
Ronald Joe West Memorial
Anna Vishanoff Memorial Loan Fund

Guaranteed Student Loan (GSL)

The terms of this loan are almost identical to those of the FISL which is described below.

Federally Insured Student Loans (FISL)

The FISL is a long-term loan made by lending institutions (banks, savings and loans, credit unions, etc.) upon certification by the Office of Financial Aid. Interest is seven percent per annum and repayment is a minimum of \$30 monthly. Repayment does not begin until nine months after graduation or withdrawal. Interest benefits, whereby the government pays the interest accruing while the student is enrolled, are available to all applicants. Interested applicants are advised that a FISL loan must be counted as a resource in meeting evaluated need if the student has filed or intends to file for financial aid. Students are reminded that lend-

ing agencies in California generally limit these loans to California residents only. Applications are available from the Office of Financial Aid.

National Direct Student Loans (NDSL)

Enrolled students who are citizens or permanent residents of the United States may receive assistance according to need from these federal funds. The loans are interest free for as long as the borrower remains enrolled as a student, and carry simple interest at three percent during the repayment period which may be extended over ten years' time.

Registration Fee loan

Graduate and undergraduate students who are not receiving financial assistance from the Office of Financial Aid may apply for this loan. To alleviate a financial emergency, an eligible student may borrow up to the amount of quarterly assessed fees provided an identified source of repayment is available. A \$5.00 service charge is applied to each loan. This loan must be paid back by the end of the quarter in which it is made. Students will not be allowed to register for the next quarter until repayment is complete.

Supplemental Educational Opportunity Grants (SEOG)

This federal program provides funds for undergraduate students who have exceptional financial need. Grants range from \$200 to \$1,500 a year, and must be awarded in combination with other financial aid.

Teaching Assistant loans

Graduate students who are under contract with the University as Teaching or Research Assistants or the equivalent may, 30 days before the effective date of employment and before receipt of the first paycheck, borrow up to one month's salary. The full amount of the loan, plus a one percent interest charge, must be repaid from the first three paychecks. The loan is available during the initial period of employment only.

University of California grants

Awards are made in varying amounts to graduate and undergraduate students who establish substantial need.

Work-study program

On-campus or off-campus jobs with participating non-profit agencies are available to eligible students. Recipients are provided with up to 20 hours per week of employment during the school year and 40 hours per week during vacation periods.

C10 State and departmental awards

Some of the following financial aid programs require separate and special applications. Further information and application forms may be obtained from the UCSB Office of Financial Aid, high school and community college counselors, or the appropriate academic departmental office.

Cal Grant A

These State awards which are applied toward Registration Fees may be held concurrently with other University awards. Students who have been enrolled for nine quarters or less must apply for a California State Scholarship since other financial aid cannot replace State Scholarships for which students failed to apply.

College of Engineering

Several awards based on scholastic promise and achievement are available. Further information may be obtained from the Office of the Dean, College of Engineering.

Cal Grant B

These grants are made available through the California Student Aid Commission.

Law Enforcement Education Program

Loans and/or grants are available to qualifying in-or pre-service local, state, or federal law enforcement officers enrolled on a full or part-time basis. Further information is available from the Office of Financial Aid and from University Extension.

Speech and Hearing Fellowships

A limited number of federally sponsored fellowships and traineeships are available to graduate students majoring in Speech and Hearing Sciences. Students interested in such assistance should contact the Speech Department Office for further information.

U.S. Army ROTC Scholarship Program

Army ROTC Scholarships are available to selected applicants. These scholarships pay all costs for tuition, registration and laboratory fees, expenses for books, and \$100 a month cash to the student. Full four-year scholarships are offered to high school seniors selected in a nationwide competition. A limited number of one-, two-, and three-year scholarships are also available to outstanding students. Upon graduation the recipient must serve four years in the U.S. Army and accept a

Regular Army Commission if it is offered. Applicants and those interested should consult the Military Science Department, Building 419.

C11 Prizes and Awards

Through the generosity of friends of the University, the following prizes are available to students in accordance with conditions set by the donors. Information about competitions will be published from time to time in the campus newspaper.

Academic Excellence in Psychology
Alliance Francaise Medal
Alpha Lambda Delta Book Award
Alumni Association Awards
American Institute of Aeronautics and Astronautics Mechanical and Environmental Engineering Contest Award
Arnold Nordsieck Memorial Prize in Physics
Art Affiliates Award
Art History Scholarship
A. Russell Buchanan Alumni Award
Aida and Philip Siff Prize (Philosophy)
Aida and Philip Siff Purchase Art Award
B. R. Baker Memorial Fellowships in Chemistry
C. Douglas Woodhouse Award in Geology
Calouste Gulbenkian Foundation Scholarship for Students of Portuguese Language and Culture
Chairperson's Award in Psychology
Charles Spaulding Research Prize given by Sociology Department
Edwin Corle Memorial Undergraduate and Graduate Book Collection Contest Awards
E. I. DuPont de Nemours & Company Graduate Fellowships in Physics
E. I. DuPont de Nemours & Company Stipend for Outstanding Senior in Physics
Entering Freshman Scholarships in Chemical Engineering
Erno Daniel Memorial Prize in Music (Piano)
Francis Price Hispanic Studies Award
Genevieve Haight Memorial Award
Getty Oil Company Scholarship for Undergraduates in Mechanical and Environmental Engineering
Harry K. Girvetz Memorial Prize in Philosophy
Hermione Chevallier Prize in French Literature
Ina Coolbrith Memorial Poetry Contest
Intercollegiate Athletics Scholarship Award
J. Bruce Anderson Fellowship.
John C. Snidecor Award for Excellence in Speech Pathology and Audiology
Luso-American Education Foundation for Summer Sessions, Students of Portuguese
Master of Fine Arts Scholarship
Mortar Board Award
Music Affiliates Award in Music Composition
Music Affiliates Scholarship Awards
Outstanding Graduating Seniors by Department
Outstanding Greek Man
Outstanding Greek Woman
Outstanding Junior in Chemical Engineering
Outstanding Sophomore in Chemical Engineering
Outstanding Speaker Award

Outstanding Teaching Assistant Award in
Physics
Pi Delta Phi Scholarship in French
Pierre Delattre Memorial Fellowship
Pi Kappa Lambda Graduate Award in Music
Raymond L. Wilder Award in Mathematics
Research Promise in Psychology

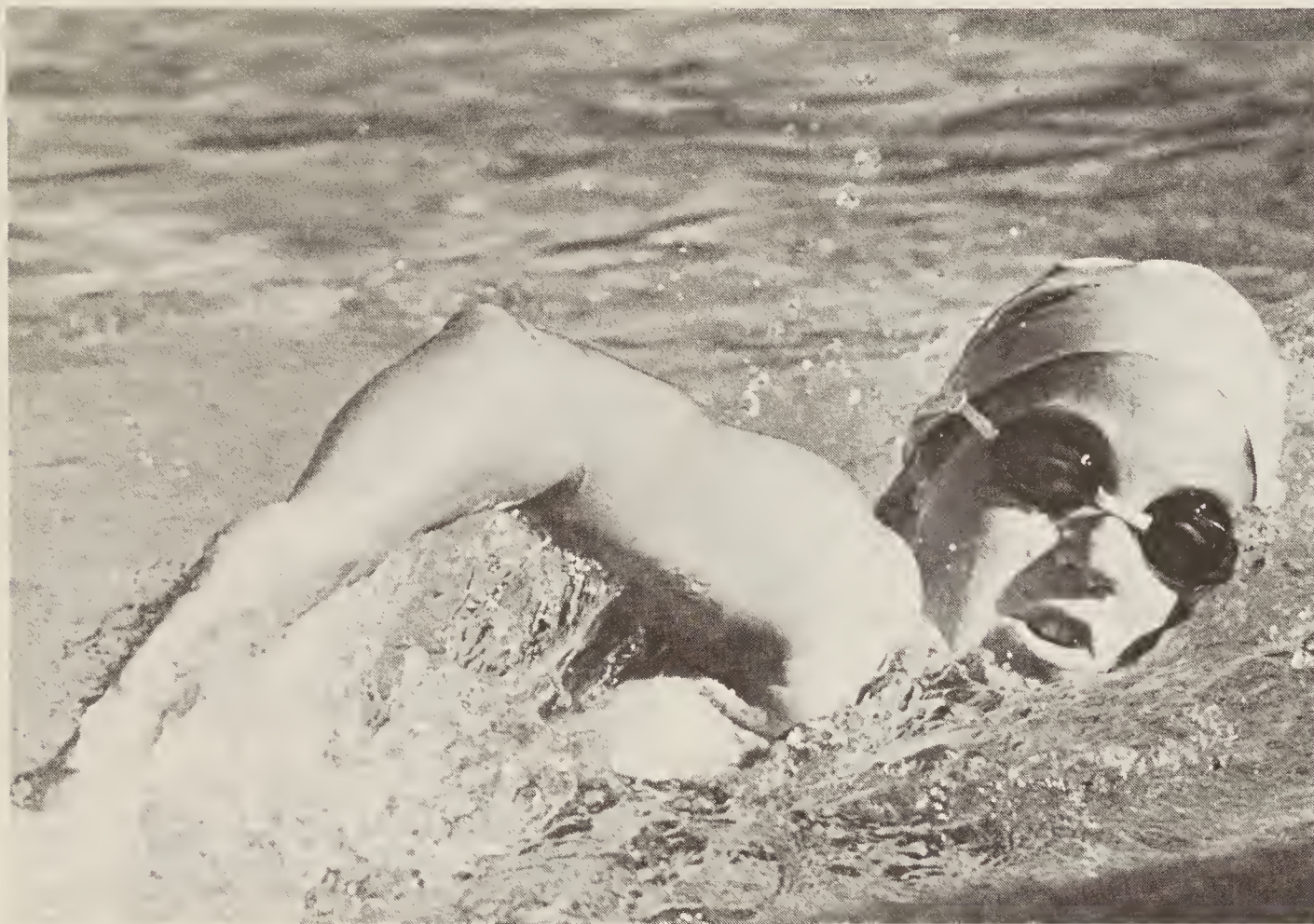
Sherrill C. Corwin—Metropolitan Theatres
Awards in Music Composition
Sherrill C. Corwin—Metropolitan Theatres Writing
Awards
Stanley Krebs Memorial Prizes in Musicology
Stephen S. Goodspeed Internship
String Quartet Awards in Music
Stuart L. Bernath Undergraduate Prize (History)
Sylvia and Irving Wallace Poetry Prize
Thomas More Storke Medal for Excellence
University Service Awards
Vernon I. Cheadle Alumni Scholarship
Warren E. Schutt Memorial Award
Willard L. McRary Memorial Chemistry Prize
William H. Ellison Graduate Prize (History)

ROTC Awards

Affiliates Trophy to Superior ROTC Cadets
American Legion Awards for General Military and
General Scholastic Excellence
American Veterans of WWII (AMVETS) Award
Academic and Military Achievement

Association of the United States Army Award for
Excellence in Military and Academic
Achievement by a Junior ROTC Cadet
Daughters of the American Revolution Gold
Medal to the Outstanding Senior ROTC Cadet
for Academic and Military Achievement
Daughters of the Founders and Patriots of
America Award for Academic Excellence in
Military History and American History
Friends of the ROTC Scholarship to any ROTC
Cadet Demonstrating Academic Excellence,
Military Merit and Financial Need
Military Order of World Wars Award to the
Outstanding ROTC Cadet
National Sojourners Americanism Award to the
Outstanding ROTC Cadet as a University-
Citizen
Reserve Officers' Association Gold, Silver, and
Bronze Medals for ROTC Cadets
Demonstrating Excellence in Leadership,
Character, and Academics
Roy E. Mayo Scholarship to any ROTC Cadet for
Military and Academic Excellence and
Demonstrated Financial Need
Santa Barbara Retired Officers Club Awards for
Outstanding ROTC Cadet Leadership
Society of Colonial Wars Award to the
Outstanding Junior or Senior ROTC Cadet for
Leadership and Scholastic Excellence
Sons of the American Revolution ROTC Medal to
the First-Year ROTC Cadet Demonstrating All-
Around Military and Scholastic Excellence

Student services and activities



D1 Academic counseling

Many sources of academic counseling are available to students at UCSB. Each college provides advice to its students in a variety of areas, such as major selection, program planning, academic difficulties, degree requirements, and petitions for exceptions to these requirements.

Advisers in each major department counsel undergraduates concerning majors offered and their requirements and possible career and graduate school options. In addition, special Graduate Advisers are available in each department to assist prospective and currently enrolled graduate students.

Preprofessional advising

Preprofessional advising is offered to students considering careers in such fields as business administration, dentistry, education, law, medical technology, medicine, nursing, physical therapy, special education, speech therapy, and veterinary medicine. General information is also available to students interested in other professional areas, such as architecture, journalism, and social work.

A health science adviser offers special assist-

ance to those students who hope to attend medical school, providing them with program advice, admission requirements, letters of recommendation, and simulated interviews.

Credential advising is offered to students interested in careers in teaching. Weekly meetings are conducted concerning UCSB's credential programs and job opportunities and qualifications for teachers.

Orientation

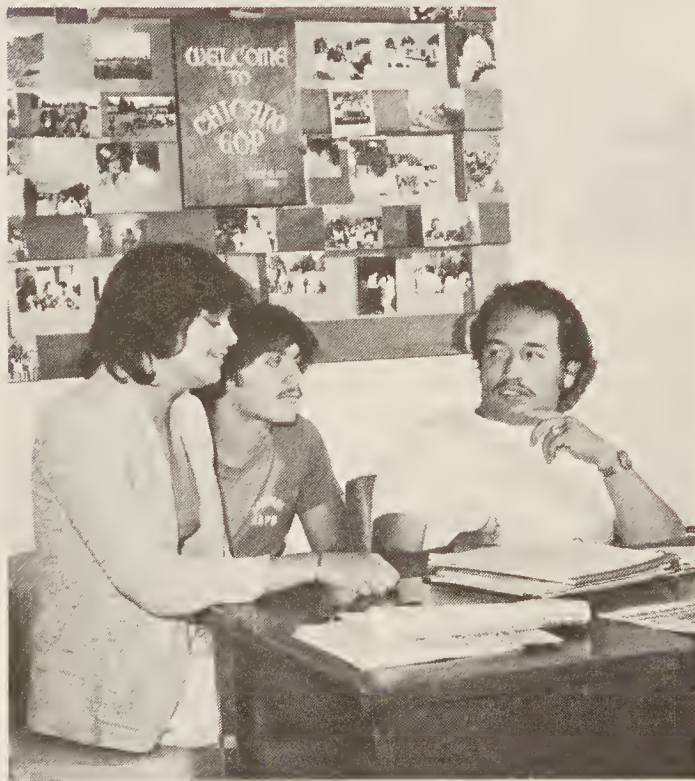
Undergraduate and graduate orientation activities are conducted during Registration Week at the beginning of each quarter. The Schedule of Classes lists important meetings for new students. Each fall, a student organized program known as "Rebysont" which is designed to acquaint new students with the campus and community. Other orientation activities are also offered for special groups such as international students, reentry women, and Educational Opportunity Program students.

An optional Student-Parent Orientation Program is offered over seven summer weekends in conjunction with the College of Letters and Science and the College of Engineering. This program is

often the undergraduate's first introduction to the campus. Freshmen, new transfer students, and their parents are invited to attend one of these two day programs which are designed to acquaint participants with the campus, its academic offerings, and registration procedures. Programs include testing, academic advising, and pre-enrollment, as well as an opportunity to meet UCSB faculty and staff. Participants stay in University residence halls and eat in the campus dining commons.

D2 Student Services

Student Services provides assistance to individual students or groups, helping them to define and resolve problems through self or third party referral. In addition, this office coordinates a number of student service programs, such as child care, and veterans affairs. This office is responsible for University discipline and the administration of the campus regulations. It maintains student records for use in counseling, "good student" auto insurance discount verification, recommendations for graduate schools and employment, and verification of unavoidable absence from academic commitments.



D3 Counseling, Career Planning, and Placement Services

Counseling, Career Planning, and Placement Services offers a range of programs and services designed to assist students to achieve their personal, social, academic, and career goals. These confidential services are free to all registered students.

Counseling (Building 478)

Individual Counseling provides an opportunity for students to explore problems, feelings, hopes, and goals with an experienced counselor in order to develop the skills and attitudes needed to live a satisfying life.

Groups and Workshop are offered which provide a safe social laboratory in which students are enabled to acquire such skills as assertiveness, communication, and relaxation, and to improve their interpersonal relationships. Students thus benefit from the support and feedback of others with similar goals.

Peer Counseling is a multi-ethnic program designed to provide the above services to students who may be more comfortable talking with a peer than with a professional counselor.

Minority Counseling is made available to ethnic minority students through target programs and ethnic counselors.

Behavioral Self-Help enables students to overcome such problems as anxiety, stress, overeating, and depression through the use of cassette tapes, players, and reading materials with the periodic guidance of a counselor.

Crisis Counseling is available immediately for students experiencing extreme difficulty.

Career Planning (Building 478)

Career Counseling affords students an opportunity to explore their interests and values, assess their skills, and choose careers which meet their needs and wants.

Career Testing is available to students who wish to determine their interests, values, and skills in order to choose a major or validate the major they have already selected.

Career Groups and Workshops focus on decision making, life planning, and clarification of values. Informational meetings on majors and careers are offered in conjunction with academic departments.

Career Information, including job descriptions, entry-level requirements, salaries, and job outlook is available to registered students in the Career Resource Room. Information about graduate and professional schools and programs across the country is also located here.

Affirmative Action Career Planning provides outreach services and career information to minorities and other affirmative action students.

Placement (Building 427)

Advising students about opportunities in business, industry, government, social services, and education is a primary service of the Placement Center.

Groups and Workshops provide students with information about résumé writing, interview techniques, and job search strategies.

On-Campus Interviews with employer representatives seeking college graduates are coordinated by the Placement Center staff. Students must register in advance to participate in this program.

Educational Placement Services assists advanced degree and credential candidates who are planning careers in the field of education. Credential files are maintained and will be sent to prospective employers on request.

Student Employment assists students to locate part-time employment, summer jobs, and internships which can help them secure both income and career-related experience.

D4 Student Health Service

The Student Health Service assists students in maintaining their physical and mental health.

Certain short-term health care services are covered by payment of the quarterly Registration Fee: **1)** Nurse and physician consultation, including general and internal medicine, orthopedics, podiatry, dermatology, gynecology and psychiatry; **2)** Medications and dressings administered by nurse or physician; **3)** Laboratory and X-rays as ordered by a staff physician; **4)** Physical Therapy procedures; and **5)** Conception Counseling Clinic. See **E1** for medical evaluation requirement.

The following health care services are provided at additional charge:

- 1)** Special laboratory, X-ray and other diagnostic procedures;
- 2)** Antigen injections, special medications and immunizations
- 3)** Continuing treatment for long-term medical problems which existed prior to enrollment, and which the Student Health Service is staffed and equipped to provide
- 4)** Transfer of medical information to colleges outside the UC system, insurance agencies, attorneys, etc
- 5)** Special medical examinations
- 6)** Prescriptions filled in the Student Health Service Pharmacy
- 7)** Dental Clinic
- 8)** Eye Clinic
- 9)** Cold Clinic

Insurance for off-campus care

Student Health Service care may be supplemented by the purchase of the Accident and Sickness Insurance Plan sponsored by the University. See **C2** for more information concerning this insurance plan. This plan provides benefits for certain medical expenses that are not provided by the Student Health Service. New students will receive further information about this insurance plan prior to payment of fees. International students see **E6** for mandatory insurance requirement.

D5 Educational Opportunity Program

The Educational Opportunity Program (EOP) which began at UCSB in 1965, enrolled approximately 1,100 students for Fall, 1979.

The program is designed to inform, recruit, admit and support low-income and/or minority high school and community college students to the campus. Through the provision of numerous support services, EOP seeks to motivate academically, economically, and socially disadvantaged students to pursue higher education. Students are provided with the opportunity to undertake and complete a university education in order that they may provide leadership and service to their communities. To this end, the program offers the following services:

1. Financial Aid
2. Pre-admission counseling
3. Admission assistance:
 - a) Possibility of fee waiver
 - b) Possibility of special admission to UCSB
4. Personal and group counseling
5. Academic advising (guidance with courses and major selection, and with graduation requirements)
6. Tutoring
7. Housing priority
8. Career and graduate school counseling
9. Summer orientation program
10. Summer residential transition program.

An admitted student's Financial Assistance Award is determined by the Office of Financial Aid through use of the Student Aid Application for California (SAAC) and a copy of the appropriate income tax forms. It is the goal of the EOP to provide sufficient financial aid to enable students to complete their University education.

EOP offers Counseling/Academic Advising relating to personal matters ranging from financial aid to problems of adjustment. The EOP maintains an Academic Tutorial Program which provides tutors in many academic fields. These tutors will meet individual EOP students upon request. Those wishing further information should consult the EOP Office. See inside back cover for location.

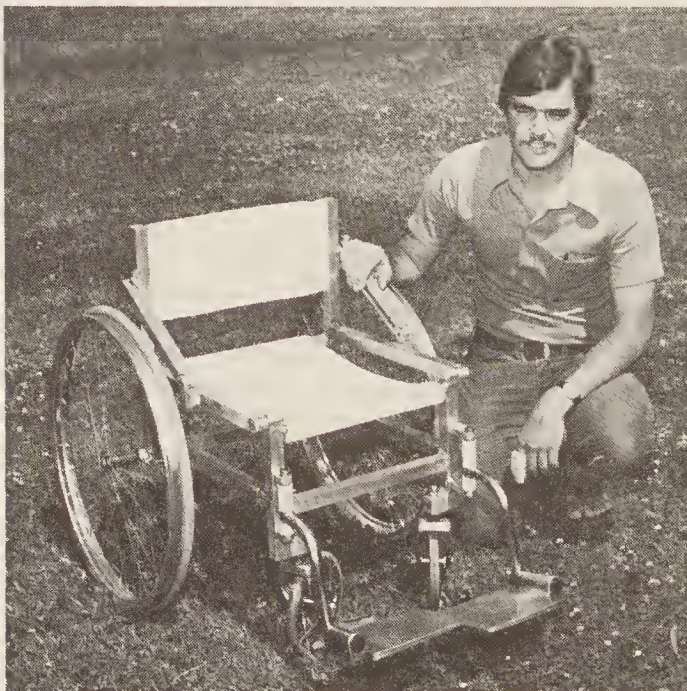
D6 Services to Disabled Students

The Office of the Special Services Program (SSP) assists students with disabilities who have special needs related to campus life and the completion of a University degree program. SSP provides, for example, interpreters, note takers, readers, mobility assistance, and academic as well as personal counseling. A specially equipped Library Resource Room, located in the UCSB Library, provides academic support through the use of adaptive equipment. A Telecommunications System (TDD) is also



available for use by deaf and hearing-impaired students. The TDD telephone number is (805) 961-2668.

Students with disabilities may be eligible for services from the California Department of Rehabilitation; such services include assistance with purchase of textbooks, fees, and tuition. For further information, contact the Santa Barbara office: Department of Rehabilitation, 402 East Carrillo Street, Santa Barbara, CA 93101, telephone: (805) 963-3645.



A mechanical engineering student demonstrates the lightweight, folding wheelchair he designed.

Special Services Program

The Special Services Program (SSP) provides support services to students who meet the criteria of the US Department of Health, Education and Welfare: 1.) educational deprivation; 2.) cultural deprivation; 3.) financial need; 4.) physical disability. Programs are being developed to seek out such students and potential students. Those who wish to apply for such Special Services are invited to apply at the SSP Office in Building 434.

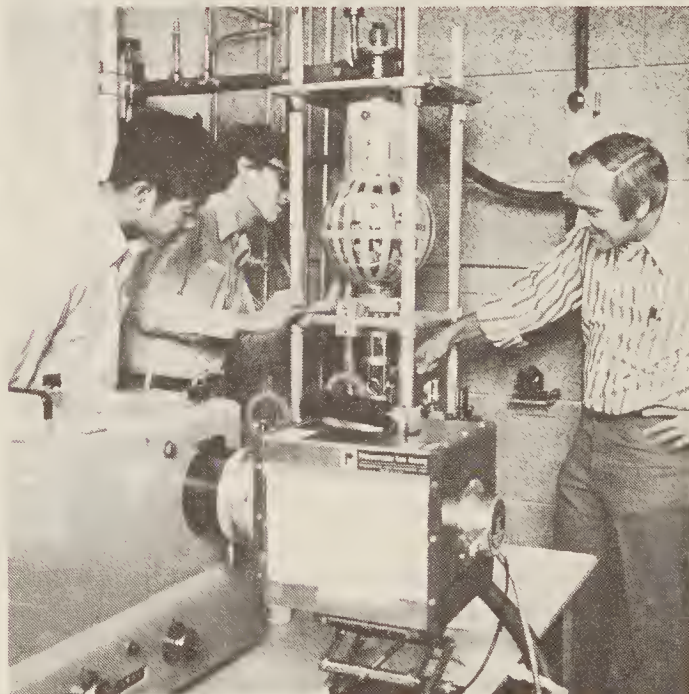
D7 Other services

Academic Skills Center

The Academic Skills Center helps students increase their understanding and practical mastery of university-level reading, writing, and study skills. Students actively work with learning skills counselors to grasp the concepts and techniques of purposeful reading, effective writing, and organized study. Every effort is made to connect skills development to actual class requirements. Individual

and small group assistance is available throughout the quarter.

The Center is open daily from 8-5 and is free to all registered students. It is located in Bldg. 477. For further information consult with directors of these programs. See inside back cover for addresses and locations.



Low temperature luminescence of new laser materials is studied in the semiconductor optics laboratory by, (l to r), Dr. Zuo-Liang Wu, a visiting scholar from the People's Republic of China; Nang-Haung Sheng, a graduate student from Taiwan; and, James L. Merz, professor of electrical and computer engineering.

Social Security

Students who qualify should apply for Social Security benefits at their local Social Security Office. The Santa Barbara Social Security Office is located at 911 Olive St., Santa Barbara, California. Telephone number (805) 963-1715. Students must carry a minimum of 12 units per quarter in order to receive such benefits.

Speech and Hearing Center

The Speech and Hearing Center is open to students with speech or hearing disorders. Staffed by professionally certified speech pathologists, audiologists, and student clinicians, the Center will evaluate such problems and provide appropriate treatment. There are no fees for these services. See inside back cover for location.

Child care

The University Children's Center on the West Campus provides day care for two- to five-year-old

children of students, faculty, staff, and community. Scholarships based upon need are available to student families. Further information may be obtained by calling the Center at 961-3665, or the Office of Student Services. Since this is a self-supporting operation, fees are charged for child care services.

Ombudsman

The Campus Ombudsman serves as a trouble-shooter for students, faculty, and administrative staff members whose problems have not been resolved by other campus agencies. For assistance, contact the office of the Campus Ombudsman. See inside back cover for location.

Office of the Dean of Student Residents

The Office of the Dean of Student Residents serves students residing in the six campus residence halls and is located in the trailers opposite Anacapa Hall and next to the Counseling Center. Student residents may seek assistance from the professional staff in matters relating to personal living problems, and in planning group social, recreational, and educational activities on and off the campus. The staff also advises and provides information about the Residence Halls Association (RHA), coordinates on-campus Interest Halls (including Creative Arts, Environmental Awareness, Community of Academic Pursuit, Science and Technology, Multi-media, and International), and facilitates enrollment in a variety of classes offered in the residence halls. Students interested in positions as Resident Assistants and as Head Resident should consult the Office of the Dean of Student Residents for details.

The University Post Office

A contract branch Post Office, operated by the University Center and located in the University Center (UCEN), provides postal services for campus residents. Students living on campus are assigned mail boxes at no extra charge by the Residence Hall Administration. Mail addressed to these students should include their box number. A *limited* number of boxes are available at a fee for students living at off-campus addresses. Such students may submit box applications at the University Branch Post Office. The zip code for all campus P.O. Box addresses is 93107.

Relations with Schools

The Office of Relations with Schools (ORS) provides liaison with high schools and community colleges and responds to the needs of prospective students and their counselors. The ORS staff is

available as a resource to high schools, community colleges, and other educationally oriented groups. Services include advising programs and preadmission counseling at schools and colleges. Informational materials describing offerings at UCSB are available in the office or by mail upon request. Visitors are welcome to come to the office to learn about current admission policies and procedures, academic programs, and other related matters.

ORS sponsors student-guided tours for prospective students, their parents, and school groups throughout the year. Information about tour schedules may be obtained by telephoning (805) 961-2485, or by writing to the office at the University of California, Santa Barbara, California 93106.

Transportation

Bicycles are the most common form of vehicular transportation at UCSB, and the campus accommodates and encourages the bicycle through an extensive system of bikeways on a relatively flat topography. Some students own automobiles, which can be parked or stored for a fee. (See **C2** for information concerning this fee). Easy access to the surrounding Santa Barbara-Goleta area is afforded by the Metropolitan Transit System, whose buses students may ride without charge by displaying a valid Registration Card. Students with disabilities unable to utilize the MTS may make arrangements with Easy Lift for transportation.

UCSB Women's Center

The UCSB Women's Center, located in Building 434, promotes the educational, professional, and personal goals of female students, faculty, and staff. The Center offers services and programs designed to meet the unique needs of women in relation to their changing roles in contemporary society.

The Women's Center has developed special programs and services which include: the Women's Reentry Program, undergraduate programming, workshops and groups, speakers and films, rape prevention and education, resource room, art shows, and counseling for career and reentry issues.

Veteran and ROTC counseling

Students who are veterans or the children of disabled or deceased veterans may be eligible for federal and/or state educational benefits. Contact the Veteran Support Services Office in the Office of Student Services, Building 434, for information. A staff of military personnel is also available on campus to counsel with students in the ROTC program.

The Office of Veterans Affairs, Building 434, assists veterans before and after admission to the University and includes a group of peer counselors who work with fellow veterans. Tutorial assistance for veterans, work-study positions, employment counseling, and a loan fund are also available.



D8 Student activities

The University Center

The University Center (UCen) is the focal point for student activities at UCSB. The UCen contains the Campus Bookstore, UCen Food Services, including a cafeteria, crepery, deli, and catering areas, and the UCen Pavillion, a beautiful indoor/outdoor area for coffee houses, small concerts, and casual lounging. Services such as check cashing and a post office and programs such as art exhibits, films, and lectures may also be found in the UCen. It also houses the headquarters of the Associated Students and the Office of Student Life.

The Office of Student Life

The Office of Student Life, located on the third floor of the University Center, is responsible for planning and scheduling student activities. All student organizations register with this office and the staff is available to assist individual students and groups with all aspects of activity planning and programming. In addition, the Staff offers developmental workshops in the areas of leadership skills, problem-solving, decision-making, group dynamics, group budgeting, and evaluation techniques. All workshops are designed to make student participation in co-curricular activities more meaningful and enjoyable.

The Office publishes quarterly and weekly calendars of events, provides a daily tape of all activities on campus, and can assist individual students to match their interests with the many clubs and organizations on campus. In addition to advising campus organizations in general, staff members in the Office serve as advisors to the Associated Students, sororities and fraternities, Program Board, and Community Affairs Board.

D9 Student government

The Associated Students (ASUCSB)

The Associated Students is the organization of all undergraduate students at UCSB, with offices on the third floor of the University Center. All undergraduates are members of the Associated Students through payment of the student fee. The central Associated Students structure consists of the Legislative Council which governs and administers the million dollar annual operating budget of the Associated Students through a network of internal student committees. Officers of this group are elected annually by the undergraduate student body.

Through partial subsidy by the Associated Students, a wide range of student services are provided. These services include the **A.S. Bikeshop**, which offers free tool loan, low cost parts sales, and low cost mechanic services; **A.S. Travel**,

which offers charter arrangements, Eurail Passes, International Student I.D. cards and ticket and flight information; free **legal advice**; a **check cashing** service; and the A.S. Program Board which includes committees for concerts, lectures, films, cultural activities, fine arts, UCen Activities and special events to satisfy the entertainment needs of students. The campus media, which includes a daily newspaper, the yearbook, and a radio station, are also supported in part by the A.S.

Besides services, the A.S. offers many opportunities for student participation in University governance. By appointment, students serve on various academic and administrative committees which recommend policy on issues of campus-wide concern. Students desiring to serve on such committees are encouraged to indicate their interest in the A.S. Office.

The Associated Students also acts as a political advocate for various campus, local and statewide issues of student concern. A.S. leaders have been actively involved in issues ranging from student housing to environmental preservation.

All A.S. members are entitled to participation in A.S. affairs and activities. Membership also includes free or reduced admission fees to athletic, concerts, social, and other A.S. events.

Graduate Students Association (GSA)

The Graduate Students Association is composed of all UCSB graduate students and seeks to represent their views and interests. The Association is governed by an elected council and an executive committee whose monthly meetings are open to all.

The Association appoints students to various University committees and publishes an annual handbook. Graduate students seeking help or information are invited to visit the GSA office. Graduate students are required to pay a GSA fee.

Eligibility for office in Associated Students Organizations

Undergraduate student candidates for A.S. office must have an overall University of California grade point average of at least C (2.0), a C average or higher for the previous quarter, and must carry a program of no fewer than 12 units during their term of office, and at the time they are running for office.

D10 Student Organizations

UCSB students have the opportunity to become involved in more than 250 student organizations which span a diversity of interests. Social and honorary fraternities and sororities are also available for interested and qualified students.

Honorary Academic Organizations:

Alpha Lambda Delta (Freshmen Women)
Delta Sigma Rho-Tau Kappa Alpha (Forensics)
Kappa Delta Pi (Education)
Mu Phi Epsilon (Women's Music)
Omicron Delta Epsilon (Economics)
Phi Alpha Theta (History)
Phi Beta Kappa
Pi Delta Phi (French)
Pi Kappa Lambda (Music)
Pi Sigma Alpha (Political Science)
Eta Kappa Nu (Electrical Engineering)

Honorary Service Organizations:

Mortar Board (Senior Honor Society)
Alpha Phi Omega (National Service Fraternity)
Gaucho Services (Tour Guides)

Residence Halls Association:

Students living in University-owned residence halls are organized into groups which conduct social, recreational and cultural activities for their members. The Residence Halls Association coordinates the efforts of these groups and works with the Associated Students through appropriate committees and boards made up of elected representatives to enhance the quality of life for UCSB residents.

Fraternities and Sororities:

Fraternities and sororities at UCSB offer a unique living experience and opportunities for personal growth. Some members of fraternities and sororities are leaders in scholarship, community service, student government, athletics, or other facets of UCSB organizational activity. For information regarding membership, contact the Office of Student Life.

The fraternities at UCSB are: Alpha Phi Alpha, Lambda Chi Alpha, Phi Delta Theta, Phi Eta Psi, Phi Sigma Kappa, Sigma Alpha Epsilon, Sigma Chi, Sigma Phi Epsilon.

The sororities at UCSB are: Alpha Chi Omega, Alpha Delta Pi, Alpha Kappa Alpha, Alpha Phi, Chi Omega, Delta Gamma, Delta Sigma Theta, Kappa Alpha Theta, Kappa Kappa Gamma, and Pi Beta Phi.

Community service projects:

Students may volunteer their services to schools, mental health programs, prisons, Indian reservations, or senior citizen homes while at UCSB. The Community Affairs Board of the Associated Students coordinates such student efforts with community needs. Students interested in some form of volunteer work should consult the Community Affairs Board.

Student media

UCSB has a student newspaper (The Daily Nexus), an AM-FM radio station (KCSB), a yearbook (La Cumbre), a literary magazine (Spectrum), an alternative student paper (Common Ground), a student, faculty, staff telephone directory (Student Directory), and a journal of undergraduate research (Discovery). Apply at the appropriate office for further information.

Peer services

A number of UCSB departments include as part of their regular staff a group of current students. These "peers" provide varied services to their fellow students, according to the goals of the Department with which they work, while concurrently receiving experience in a future career field and either academic credit or a stipend. Being a part of the department staff, they are in an excellent position to influence the nature of service offered by the department, and administrative decisions regarding the quality of life at UCSB. These peer staffs are identified by a number of different names, as the following examples illustrate.

Resident Assistants: Working in conjunction with the Office of the Dean of Student Residents, these students are juniors or seniors who live in the on-campus residence halls for one year and provide counseling and assistance to their fellow residents. Off-campus halls offer similar opportunities.

Community Housing Office: Five student housing advisors are available to help students with any concern or question related to off-campus living. These five, along with the other members of the staff, are happy to respond to inquiries about available housing options, leases, landlord-tenant rights and responsibilities, roommate selection, and related matters.

Community Service Organization: A civilian extension of the campus Police Department, over 30 "CSO's" provide bike patrols and evening escorts, respond to accidents, and serve as a communication link between students and the police on a number of topical issues.

Peer Counselors: These paraprofessionals reach students who do not traditionally make use of Counseling Center services.

Educational Opportunity Program: Peers in the University Partners Program work in surrounding high schools and community colleges to advise and motivate students to consider continuing their education. A second group of peers interact primarily with new UCSB students to aid in their transition to the University.

Women's Center: Peer services are a part of the Women's Re-entry Program. General counseling is also available at the Center through graduate interns in Counseling Psychology.

Veteran's Affairs: Peers advise and conduct rap sessions for their fellow veterans.

Academic Peer Advisers - College of Letters and Science: Peer advisers discuss general academic concerns with students, helping them to plan programs of courses, review degree requirements, and choose appropriate majors.

Peer Health Educators: After completing a ten-week course offered in conjunction with the Student Health Service, these students are prepared to educate and inform others, organize health projects, and lead group discussions in health education on such topics as drugs, nutrition, sexuality, and stress management.

Orientation Staff: Academic advising, Program planning and organization are a major responsibilities of the student staff who advise those new to UCSB in the summer and during registration week.

Rescue Team: Through the UCSB Police Department, the team provides 24-hour paramedic rescue service to the campus and Isla Vista, a mutual aid rescue boat with the U.S. Coast Guard, and a mutual aid service with the Santa Barbara County Paramedics.

Similar opportunities are available through additional peer staffs, as well as through the Financial Aid Work/Study Program, the Residential Services' Work/Live Program, and volunteer associations on campus and in Isla Vista. Further information may be obtained at the Office of Counseling and Career Services and at the Office of Student Life.



D11 Athletics and Recreation

Intramurals Division

Through the Department of Intercollegiate Athletics and Leisure Services, UCSB maintains a

year-round program of sports activities to suit the interests and abilities of every student. This program offers more than 70 sports, including floor hockey, softball, soccer, basketball, flag football, volleyball, tennis, and badminton. Among the more popular coed sports are innertube waterpolo, volleyball, basketball, and soccer.

Recreation Division

The Recreation Division provides many leisure activities for UCSB students, faculty, staff, and local community residents. Offerings include the use of two campus swimming pools, two gyms, a gymnastics area, a weight room, a photo lab, and recreational sailing. Noncredit classes in such activities as guitar and tennis are offered; various recreational equipment is available for rental. The outdoor program offers instruction in kayaking, canoeing, scuba, mountaineering, ice skating, and skiing, as well as backpacking, boating, and camping outings. Many areas of the recreation department, including the pool, weight room and leisure services, have been expanded to meet the needs of students with disabilities.

The Recreation Division also assists students in the organization and administration of clubs and teams. Many UCSB Recreation Club teams compete with intercollegiate teams from many other colleges and universities.

The Recreation Division publishes a quarterly supplement, *Leisure Review*, which contains listings of intramural, recreational, leisure, and intercollegiate activities for each quarter. The *Review* is available on campus at the beginning of each quarter.

Intercollegiate athletics

UCSB's intercollegiate athletic program offers 11 varsity sports for men: cross country, water polo, soccer, basketball, swimming and diving, gymnastics, volleyball, track and field, baseball, golf, and tennis; and six for women: tennis, volleyball, swimming and diving, track, gymnastics, and basketball. All men's varsity teams compete in the National Collegiate Athletic Association University Division and the Pacific Coast Athletic Association. Women's teams compete in the Association for Intercollegiate Athletics for Women and the Southern California Athletic Association.

D12 Alumni Association

The Alumni Association seeks to advance the interests of the University as well as to provide benefits to students and alumni. Some of these student services are: scholarships (through the Financial Aid office), theater programs, short term interest-free loans, grants of money to student groups, summer jobs, and a summer on-campus vacation center which is open to students, alumni, and their families.



International Students



This section deals with information applicable only to nonimmigrant students. However, it is important that each nonimmigrant student also be familiar with all other sections in this catalog.

E1 Admission to the University

Nonimmigrant students are governed by the same regulations as students from the United States with regard to undergraduate and graduate admission as described in **B** and **I**.

In addition, every entering nonimmigrant student whose native language is not English, must demonstrate written and oral competence in English by taking the Test of English as a Foreign Language (TOEFL). A minimum TOEFL score of 500 is required both for undergraduate and for graduate admission.

An international student applying for admission to the lower division of the College of Engineering must pass with satisfactory scores the College Entrance Examination Board Scholastic Aptitude Test

(verbal and mathematics sections) and the Achievement Tests in English composition, physics, and advanced mathematics before a letter of admission to the College of Engineering can be issued. Scholastic Aptitude Test—total score must be 1100, with minimum of 500 in each test (Verbal & Math sections). Achievement Tests—total score 1730, with minimum of 500 in each test (Eng. Comp, physics, and advanced Math).

Arrangements to take these tests may be made directly with the Educational Testing Service, P.O. Box 592, Princeton, New Jersey, 08540 or P.O. Box 1025, Berkeley, California, 94701. The UCSB Institution code is 4835. The applicant should request that the test score be forwarded to the UCSB Office of Admissions, or to the Graduate Division, whichever is applicable.

Since undergraduate admission for all students is under the jurisdiction of the Office of Admissions, all inquiries regarding admission should be addressed to that office.

All requests for graduate admission should be addressed instead to the department into which a student is seeking admission.

E2 English Language Placement Examination (ELPE)

The results of the English Language Placement Examination (ELPE) will determine the course of English studies to be taken. Students who pass the ELPE at a sufficient level of proficiency will be exempted from further ESL course requirements. Undergraduates must then meet the Subject A requirement. Graduates who pass the examination are exempt from further English requirements.

Students who do not pass the ELPE will be required to complete appropriate portions of the semi-intensive ESL course sequence. Undergraduates will be placed in English for Undergraduate Students, graduates will be placed in English for Graduate Students, and graduates wishing to take advantage of teaching assistantships offered by specific departments will be placed in English for Special Purposes.

Overall course performance along with final examinations within the semi-intensive ESL course sequence for undergraduates will determine their status with regard to the Subject A requirement. Overall course performance along with final examinations within the semi-intensive ESL courses, either English for Graduate Students or English for Special Purposes, will determine when graduates are exempted from further English language study and when they will be able to take advantage of teaching assistantships.

Courses within the semi-intensive ESL program are mandatory for students not passing the ELPE. The study program should be limited during quarters when a semi-intensive ESL course is taken. When only one course is required, it should be taken in the first quarter of attendance. If two or more are required, they should be taken one at a time, with a limited class load, in consecutive quarters.

E3 Office of International Students and Scholars

Every nonimmigrant student must report to the Office of International Students and Scholars in Building 434, where advisers and staff are available to provide necessary assistance. Students should bring their passports and visa documents with them to the office.

E4 Orientation

New nonimmigrant students are expected to participate in an orientation program at the beginning of the fall quarter. The purpose is to welcome new international students to the University, to introduce them to the staff, and to international and American students, and to acquaint them with the campus and the surrounding communities. University regulations and registration procedures will be

discussed and questions will be answered about visa requirements and related topics.

E5 Nonresident tuition

Nonimmigrant students are required to pay a non-resident tuition fee of \$800 per quarter in addition to the fees that are common to every student at UCSB. See **C2** for a detailed explanation of these fees.

E6 Health insurance requirement

Students having nonimmigrant visas are required to purchase for themselves and any dependents who accompany them the Student Accident and Sickness Insurance Plan. Information about this plan will be sent to nonimmigrant students with their application for admission. Payment of the insurance premium is required at the time of registration. Inquiries regarding exception from the purchase of the insurance plan should be directed to the Office of International Students and Scholars. Please refer to **C2** for additional information about insurance.

E7 Financial aid

Nonimmigrant students normally will not be considered for financial aid through the Office of International Students and Scholars until they have been enrolled on this campus for at least three quarters. More detailed information can be obtained from the Office of International Students and Scholars upon request. Nonimmigrant students are not eligible for assistance from the Financial Aid Office.

Inquiries from nonimmigrant graduate students for fellowships, teaching and research assistantships, readerships, and tuition waivers, must be directed to the Graduate Division and to the appropriate academic department. Fellowship applications must be submitted to the Graduate Division not later than January 15 for the following academic year. The application dates vary for the other categories of aid above. Consult the appropriate academic department for details.

Emergency loans are available to nonimmigrant students in limited number and amounts. These loans normally must be repaid within a three-month period.

E8 Part-time employment

Nonimmigrant students may obtain jobs on campus such as teaching or research assistantships, readerships, and President's work-study. Students who wish to work off campus must first obtain a work permit from the Immigration and Naturalization Service. "J" visa holders must also obtain such permission from their sponsor. The Immigration Service will usually not authorize off-campus

employment during the first academic year. Part-time job opportunities for nonimmigrant students are extremely limited.

E9 American history and institutions requirement

Undergraduate nonimmigrant students may petition for waiver of the American history and institu-

tions requirement through the Office of International Students and Scholars. See **H3**.

E10 Language credit

Students from countries whose language is not English will receive college credit in their own language and literature only for courses satisfactorily completed. Such courses must be taken in their country at institutions of college level, or at upper division or graduate level at the University of California or another institution of approved standing.

Education Abroad Program



UC students do archaeological research while in Israel as participants in the Education Abroad Program.

University Office

William H. Allaway, *Director.*
Patricia Chackel, *Coordinator, Administrative Services.*
William F. Dukes, *Associate Director.*
Theodore D. Hanley, *Associate Director.*
Hallam C. Shorrock, Jr., *Associate Director.*
Terry Spies, *Coordinator, Reciprocity.*
Henry Weaver, *Deputy Director.*

UCSB Coordination Office

Brian W. Selander, *Academic Counselor.*
Adil Yaqub, *Campus Coordinator.*

UC Study Center Staff, 1980-81

James Maharg, Ph.D. *Director, Barcelona Study Center.*

Edmund Utne, *Administrative Liaison Officer, Bergen Study Center.*

Steinar Husebye, *Academic Liaison Officer, Bergen Study Center.*

Madeleine Korol-Ward, Ph.D., *Director, Bordeaux Study Center and related programs.*

Malcolm H. Kerr, Ph.D., *Director, Cairo Study Center.*

Gary L. Lease Ph.D., *Director, Goettingen Study Center.*

Thomas G. Penchoen, Ph.D., *Director, Grenoble Study Center and related programs.*

Wayne C. Harsh, Ph.D., *Director, Hong Kong Study Center.*

Mishaël M. Caspi, Ph.D., *Director, Jerusalem Study Center and related programs.*

Juan Villegas, Ph.D., *Director, Lima Study Center.*

Birger A. Pearson, Ph.D., *Director, Lund Study Center.*

Cándido Ayllón, Ph.D., *Director, Madrid Study Center.*

David G. Sweet, Ph.D., *Director, Mexico Study Center.*

Thelma E. Rowell, Ph.D., *Liaison Officer, Nairobi Study Center.*

Louise George Clubb, Ph.D., *Director, Padua Study Center and related programs.*

Charles F. Altman, Ph.D., *Director, Paris Study Center and related programs.*

José Carlos Sebe Bom Meihy Ph.D., *Director, São Paulo Study Center.*

Fred G. Notehelfer, Ph.D., *Director, Mitaka-Tokyo Study Center and related programs.*

Andrew Wright, Ph.D., *Director, United Kingdom and Ireland Study Center.*

John P. Lynch, Ph.D., *Associate Director, United Kingdom and Ireland Study Center.*

Hedwig D. Thimig, Ph.D., *Vienna Study Center.*

Appointment pending, *Director, West Africa Study Center, (Ghana, Sierra Leone, Togo).*

F1 Concerns of the Program

Administered for the University of California by the Santa Barbara campus, the Education Abroad Program is now entering its nineteenth year of operation. Study Programs have been established in Austria, Brazil, Egypt, France, Germany, Hong Kong, Israel, Italy, Japan, Kenya, Mexico, Norway, Peru, Portugal, Spain, Sweden, United Kingdom and Ireland, the USSR, and West Africa. All programs are for a single academic year, except for Hong Kong where certain qualified students enter the Program as seniors and remain for one additional year of graduate study. In the USSR the Program is for four months or the full academic year.

F2 Purpose

The Education Abroad Program was originally designed to give mature, highly motivated and academically superior upper division students from all UC campuses rich experience in a new cultural milieu as a part of their normal undergraduate program. Somewhat later, a graduate dimension was added which has now made a significant contribution in assisting a small number of selected students in their programs toward advanced degrees.

The Program stimulates the intellectual development of the participants, broadening the general education of all and giving a new depth to the particular academic interests of some. Most gain fluency in a language other than their own, and all grow in their ability to engage in independent study. Perhaps most valuable of all are increased self-understanding, clarified life purposes and a broadening and deepening of personal values.

One of the most distinctive features of the Program is the emphasis placed on the full integration of the UC students into the life of the host university. For the most part, UC students abroad live as do the students of the host university, attend the

same classes, take courses from the same professors and take part in local social and cultural activities. As an aid in facilitating UC student adjustment to unfamiliar educational practices, tutorials are included within the curriculum of most of the Study Centers, supplementing the regular academic offerings of the host university.

F3 The academic program

The academic program of each student includes: (1) a preparatory course in the language of the country (except for the Egypt, Africa, and United Kingdom and Ireland Programs); (2) with few exceptions a full academic year of credit courses; and (3) the opportunity when qualified to pursue independent study, either in the student's special field of interest or in new fields, which the student may wish to explore.

In order to assist students to adjust to different academic requirements of the host university and to provide a link to American university practices, many courses taken by UC students are supplemented by tutorials. The tutorials are conducted by graduate students or junior staff of the host university, who help UC students to resolve language difficulties, provide cultural background presupposed by the lectures, give opportunities for questioning and discussion, and supplement the lectures by reading assignments, papers and evaluation of progress.

Each student is concurrently enrolled on a home campus of the University of California and at the host university. Full academic credit is received for courses satisfactorily completed. The selection of courses is such that, by advance planning and wise choice, most students can make normal progress toward graduation. Students may be able to fulfill some general education requirements.

F4 Academic planning and advising

A participant who wishes to make normal progress toward graduation should counsel *in advance* with the departmental adviser assigned to the student and the dean of that school or college in order to ascertain how participation will affect the student's academic program. In the following pages, entries are provided for each of the Study Centers, listing the major departments of study. Individual courses presently approved for UC credit are not listed here, but may be obtained in the *EAP Advisers' Manual* in the campus EAP Coordination Office (1231 Girvetz Hall) and in EAP departmental advisers' offices. Since offerings at the host universities may change rapidly, the listings in the Manual represent the courses UC students have taken in the past. Many of the same or similar courses will be available in future years, but the student should plan a program that is sufficiently flexible to allow the taking of alternate courses. Each year new courses are added to a Center's approved offerings as needed by UC students attending and as

available at the host university. Although courses approved by the University of California carry full credit, each department retains the right to determine the extent to which it will accept units so earned in the fulfillment of the requirements for its own majors.

Normally, students apply for admission to the Program during the Fall Quarter of their sophomore year. However, a limited number of students are accepted each year to participate as seniors and as graduate students. Such a student should make inquiry of the dean of the college as well as of the academic advisers concerning residence requirements in order to learn in what way participation will affect graduation or graduate status. (See H5 .)

In order to facilitate the academic work of the students, University of California professors serve as Directors and Associate Directors of most Study Centers. They work with their counterparts in the host university in developing the academic program and advise students on any problem pertaining to their work. In addition, the Directors are responsible for all aspects of student welfare and conduct.

F5 Selection

Participants are screened on each campus by a faculty committee appointed by the Chancellor. Basic requirements are: Upper Division standing in the University at time of participation, two years of university-level work in the language of the country (with some exceptions) with a B average, and an over-all B average. In addition to academic criteria for selection, the faculty committee attaches much importance to indications of the student's seriousness of purpose, maturity and the capacity to adapt to the experience of study abroad. As part of the screening process, students are required to consult with their adviser, to obtain clearance from the University's Student Health Service, and, for purposes of placement, to take a language proficiency test (MLAT) where applicable.

With the exception of students from California community colleges, transfer students are eligible if they have completed at least one quarter in the University of California at the time of selection. California community college students may apply for the Education Abroad Program prior to their active enrollment in a campus of the University of California, but only under certain conditions. Such students, considered during their sophomore year, must compete with UC students on the campus on which application for admission is being processed. If selected for EAP, a community college transfer student must have been admitted to a UC campus prior to departure for the Program.

F6 Student conduct and parental approval

It is anticipated that the students selected for the Education Abroad Program will be of high caliber,

and committed to profiting from both the intellectual and social aspects of the experience. Since they will be guests in another country and another university, their conduct will reflect on both the University of California and the United States. Students participating in the Education Abroad Program are responsible to the Director of the Center, to the Director of the EAP, to the faculty of the University of California, and to the faculty members of the host university who are related to the Program. The Director of the EAP reserves the right to terminate the participation in the Program of any student whose conduct (in either academic or non-academic matters), after careful consideration and full review, is judged to be contrary to the standards and regulations of the University of California and the host university.

Participation in the Program by students under the age of 18 must be approved by the parents or guardian. In approving such participation, parents and guardians should be aware that a greater degree of personal freedom is inherent in the foreign university and that the University of California cannot take responsibility for supervising closely the activities of individual students. The Directors of the Centers will be available to students with problems and will maintain close contact with the student group as a whole. The University shares the cost of comprehensive medical and hospitalization coverage for all participants.

F7 Cost and financial aid

The Regents endeavor to bring the Program within the reach of all students regardless of their financial resources. In most instances, participants may take their University scholarships with them. The NDSL and Regents' loan fund are also available. A few scholarships and fellowships specifically for EAP participants are available in a number of the Programs. Also in the past funds have been provided by the US Department of State and the University of California for financially disadvantaged students. It is hoped such funds will be available in the future. Costs range between \$4,303 and \$7,228 for the year programs (including tuition, room and board, round-trip transportation, books, health and accident insurance, some vacation travel and about \$150 per month for personal expenses). Prospective participants who require financial assistance should counsel early with the Financial Aid Office.

F8 Other arrangements

The Education Abroad Program arranges transportation to the various Study Centers and will furnish information on economical transportation back to the United States. In most Study Centers a variety of housing facilities may range from residence halls to rooms in private dwellings.

Application forms for admission to the Program are available in the EAP office and are given to students following a discussion of various aspects of the Program with the EAP Academic Counselor. Deadline dates for filing applications are firm requirements, and for some Programs occur very early in the academic year. Information on deadlines and related matters such as course offerings, selection, orientation, withdrawal from the Program after selection, schedules of departures, payment of fees, etc., may be obtained from the EAP Academic Counselor or Coordinator at 1231 Girvetz Hall.

F9 Overseas campuses

Austria

The University of Vienna

The University of California cooperates with Stanford University in an exchange program that allows a limited number of UC students to participate in the Stanford Overseas Program in Vienna. While standard course offerings are available in a number of fields, preference is given to UC students interested in Studio Art, Music instruction, and Eastern European Studies. Students will enroll as auditors at the University of Vienna or at affiliated institutions, but receive grades for each course, to be given by the Director of the Stanford Program.

The Vienna Program begins in Goettingen, Germany, with an intensive language course at Georg-August University conducted by the EAP prior to the start of the academic year at the University of Vienna.

Brazil

University of São Paulo

The University of California participates in a program administered by Stanford University, presently known as the Interuniversity Study Program in Brazil. The curriculum emphasizes the study of Brazilian literature and Portuguese language but offerings are also available in the Arts, Humanities and Social Sciences. Students with appropriate background may enroll in independent study projects. UC students are considered auditors by the University of São Paulo, but receive grades for each course, given by the Director.

The Brazil Program begins in late June with an intensive language program in Portuguese and concludes late in the spring of the following year. Preference in selection of UC students is given to those with two full years (or the equivalent) of university Portuguese or with one year of Spanish and one year of Portuguese. However, admission to the Brazil Program will also be considered for highly motivated students without previous training in Portuguese, but who have completed two years of university Spanish combined with a five-week intensive language course in Portuguese.

Egypt

The American University in Cairo

The American University in Cairo (AUC) offers a broad curriculum. All courses except those involving Arabic language and literature, are taught in English. California students may enroll in any of the courses offered by the Faculty of Arts and Sciences, although it is expected that most UC students selected for the Program will enroll in courses in Arabic and in Middle East Studies. All students, irrespective of their field of interest, will be required to take at least one course in Arabic during the year. The academic year at AUC consists of two semesters, starting in late September and concluding early in June. The grading system follows the UC plan of letter grades.

Courses may be selected from offerings in Anthropology, Arabic Studies, History, Mass Communication, Materials Engineering, Political Science, Sociology, Teaching Arabic as a Foreign Language, and Egyptology.

France

The University of California Programs in France currently provide opportunities for enrollment in seven host universities. Several of these Programs are specialized and are structured to meet well defined academic needs. UC students making application for France may indicate their preference of host universities within this group, but final assignment is made on the basis of suitable course offerings. The Programs are administered through UC faculty and staff in residence in Bordeaux, Grenoble and Paris.

A compulsory, intensive language course precedes the beginning of the fall semester. All courses are taught in French. Customarily, tutorials accompany those courses in which more than eight UC students enroll.

University of Bordeaux

Major emphasis in the broad areas of the humanities and social sciences. Courses available in recent years have included offerings in Art History, Economics, French, Geography, History, Philosophy, Political Science, Psychology, Sociology, and Spanish. The institute of Political Science at Bordeaux is especially well known. All foreign language courses are literature courses. Some courses that fulfill general education requirements in the humanities are available.

University of Grenoble

Major emphasis in courses available through the Université des Sciences Sociales (Grenoble II), with limited openings available in the physical sciences. It may also be possible to pursue studies at Grenoble I (Natural Sciences) or Grenoble III (Humanities).

University of Aix-Marseille

Major emphasis in the Biological Sciences with course work available only at the Marseille campus in such fields as Neurophysiology, Neuropsychology, Genetics, Animal Physiology, Biochemistry and Environmental Marine Biology.

University of Montpellier

Major emphasis in literature and the humanities. Course arrangements are made primarily through Paul Valéry University of Montpellier.

University of Paris

Major emphasis in Film, Contemporary Criticism and Culture, and History, but with opportunities for graduate students in other appropriate fields. The film program includes: (1) courses especially designed for the Paris Center and (2) courses offered in the film department in the University of Paris III and other film departments in Paris. Film courses are structured not toward production, but to integrate the study of film to the Humanities and to emphasize its relationships with the Arts. In conjunction with the film program, the Center offers undergraduate and graduate courses for students interested in contemporary French critical thought. The history program consists of several "core courses" taught by leading French historians, in addition to seminars and courses at the University of Paris, the Ecole des Hautes Etudes, and the Collège de France.

University of Pau (Pau-Paris)

Major emphasis in French Civilization. The Program permits qualified undergraduates to experience an academic year in France sequentially in a provincial and metropolitan environment. The Program involves intensive language courses in French at the University of Pau (September to October), followed by continuation through the fall quarter (October to January) at Pau, where courses are planned in regional aspects of French Civilization together with standard offerings in History, Geography, Art, Linguistics and Literature. For winter and spring quarters (February to June) students are enrolled at the Institut des Professeurs de Français à l'Etranger of the University of Paris III in a combination of special courses in French Civilization and regular University of Paris courses.

University of Poitiers

Strong courses in French Language and Literature and Art as well as in Medieval and Contemporary History.

Germany

Georg-August University at Goettingen

A compulsory intensive language course precedes

the beginning of the fall semester at the Georg-August University in Goettingen. All courses are taught in German. Tutorials supplement courses in which more than five UC students are enrolled. Almost all majors can find courses in their fields, but space for laboratory courses in Biology and Psychology is severely limited. Science majors may be restricted to theory courses.

Departments in which UC students have studied profitably in the past are: Anthropology (cultural and physical), Art, Biological Sciences, Chemistry, Economics, German, History, Linguistics, Mathematics, Modern Languages (French, Spanish, Scandinavian, Slavic Languages), Music, Philosophy, Physics, Political Science, Psychology, Religious Studies and Sociology. Courses that fulfill general education requirements in the humanities are available.

Ghana

University of Ghana

The University of Ghana at Legon-Accra admits a limited number of graduate and undergraduate University of California students. Selection is made on the basis of scholarship, field of specialization, motivation and ability to adapt to an African environment. Study at the University of Ghana is based on the British system; hence students are expected to restrict their course work to their major or area of specialization while in Africa. Course programs are continued through the academic year; thus a study program set up within one discipline during the first term must be continued throughout the three terms the student is enrolled. Courses may be selected from offerings in Anthropology, Archaeology, African Area Studies, Economics, English, African Geography, Geology, African History, African Music, Philosophy, Political Science, Psychology, Sociology, Religions. (Not open 1980-81)

Hong Kong

Chinese University of Hong Kong

Annually a limited selection of courses is offered in English by the Chinese University of Hong Kong (CUHK). University of California students have previously studied with profit in the following departments: Art (studio courses, for Mandarin-speakers), Chinese (i.e., Cantonese, Mandarin), Economics (especially Development Economics and History of Economic Thought), English (some basic courses, including Drama, offered by British or American staff members), History, Philosophy and Sociology.

Both Mandarin and Cantonese are taught at a large Chinese language center. Students who enter CUHK with less than 18 units of Chinese must include 27 quarter units of Chinese language instruction in their annual program. UC undergraduates who enter CUHK with more than 18 units of Chinese must complete only the additional units

needed to reach a total of 45 quarter units. Students normally take no more than nine units of Chinese in any term.

Since there is substantial annual variation in the number and distribution of courses offered in English, and information about them becomes known only one week before instruction begins, there can be no assurance that specific courses will be available.

Two teaching assistantships may be available to advanced graduate students through a grant from the U.S. International Communications Agency (ICA).

Israel

UC students studying in Israel are enrolled at the University of Haifa or at The Hebrew University of Jerusalem. A single application is filed for the Program with the student indicating preference for the host university. Final determination of assignment is based upon available course offerings, the student's academic program along with personal concerns. First priority for admission to the Program in Israel is given to students who have completed at least one year of Hebrew. A compulsory language course in Haifa precedes enrollment. UC students at both universities are under the supervision of a UC faculty member in Jerusalem.

University of Haifa

Special attention given to contemporary Israel as reflected in the Social Sciences and Arab-Jewish Studies. Strong emphasis on the Kibbutz movement. UC students enroll in a special one year program for foreign students, but when qualified, have access to a broad curriculum throughout the full university. Basic courses include offerings in Judaism and Zionism; Israel: History and Politics; Israel and the Middle East; Israel: Society and Social Planning; Communal and Cooperative Movements. Course work is also available to a limited extent in the Sciences, and special opportunities are now open to students in Underwater Archaeology. Field work and independent studies also available.

The Hebrew University of Jerusalem

Foreign students attending the Hebrew University are first enrolled in the School for Overseas Students which offers a program designed to prepare students to be admitted into the regular offerings at The Hebrew University. The courses begin in English and progress toward full Hebrew instruction. A wide variety of courses is available in the fields of Jewish Studies, Social Sciences, and Humanities. Qualified students may take courses throughout the University in a broad curriculum. Laboratory space is limited, however, and departmental permission is required to take science courses.

In the past, students have profitably studied in the following departments: Archaeology, Geography, Hebraic Studies, History (emphasis on History of Jewry, Israel and Middle East), Islamic Civilization, Philosophy, Political Science, Psychology, Religious Studies, Semitic Languages and Sociology.

Italy

For all Programs in Italy, an intensive compulsory course in language and contemporary Italian history at the University of Padua precedes the opening of the academic year. Customarily two years of Italian at the University level or the equivalent are required for participation. However, students who have completed only one year of Italian are also eligible but, if selected, must also participate in a special two month summer intensive language program at the University of Perugia to be followed by the Intensive Language Program in Padua.

Accademia delle Belle Arti di Venezia

Course work available in Painting, Sculpture, Decor, and Scenography. UC students choose from these four fields and work under the direction of senior professors and their assistants. Art History courses are also available in Painting, Sculpture and Decor. Students interested in Studio Art must submit portfolios as part of the screening process.

Conservatorio di Musica G.B. Martini di Bologna

Individual instruction offered in piano, violin, viola, bassoon, clarinet, flute, recorder, trombone, horn, organ, oboe, cello, harpsichord, double bass, saxophone, harp, guitar, and percussion instruments. Additional courses available in voice, choral music, harmony and counterpoint, fugue and composition, conducting, as well as music in films and television, electronic musical equipment. Courses in the History of Music for five or more students. Tapes or copies of musical composition must be submitted in order to apply for the Program at the Conservatorio.

Cini Foundation at Venice

Graduate students study independent projects concerned with the History of Art. No formal academic program. Graduate students may enroll in a combined program through the University of Padua and the Cini Foundation.

University of Padua

All instruction is in Italian and tutorials accompany courses in which several UC students are enrolled. Students work in "study groups" of four to ten students, each group directed by a Study Center

docent. At present there are three fields: Italian Literature (including Linguistics), Political Science, (which includes History, the Social Sciences, Geography and Demography) and the History of Art. These core courses have three parts which must be taken concurrently: A) a basic University of Padua course; B) center seminar under UP docent; C) independent research for variable units. Students well prepared in Italian may take an optional additional course, outside the study group, chosen from the UC approved courses of the University of Padua in such fields as Economics, Philosophy, Psychology and Religion. Courses fulfilling general education requirements are available in the Humanities and Social Sciences.

Japan

International Christian University

The International Christian University (ICU), located in Mitaka, a suburb of Tokyo, is organized primarily along the lines of an American institution. Before enrolling, students must have completed one year of Japanese at the university level or its equivalent. During their year of study students are expected to complete an additional 18 units of work in Japanese language. Excellent opportunities exist for students interested in the Japanese language and in problems of the Orient, but a limited knowledge of Japanese may restrict students to courses offered in English. The number of courses taught in English usually changes from year to year since such courses depend on foreign visiting faculty, or permanent ICU faculty (Japanese and foreign) who can teach in English. Tutorials are not offered, but independent study with individual faculty members is available.

Students have profitably studied in the following fields: Archaeology, Japanese Art, Economics of the Far East, History of the Far East, Japanese Language and Literature, Oriental Philosophy, Physics, Political Science, and Sociology of Japan.

The University of Tsukuba

An exchange program for graduate students is available as a cooperative project with Japan's new national university, Tsukuba, located 37 miles from Tokyo. Approximately three graduate students may be admitted to Tsukuba, a university associated with a large number of research institutes. Among them are Agriculture, Biochemistry, Art, Biology, Chemistry, Education, History and Anthropology, Literature and Linguistics, Mathematics, Medicine, Modern Languages, Philosophy, Physics, Psychology, Social Engineering, and Social Sciences.

Kenya

University of Nairobi

The University of Nairobi admits a limited number of graduate and undergraduate University of California students. Selection is made on the basis of scholarship, field of study, motivation and ability to adapt to an African environment. Study at the University of Nairobi is on the British system; hence students are expected to restrict their course work to their major or area of specialization while in Africa. Course programs are continued through the academic year; thus a study program set up within one discipline during the first term must be continued throughout the three terms the student is enrolled. Examinations are given once, at the end of the academic year and are mandatory for receiving credit.

Graduates and undergraduates may select courses from offerings in History, English and African Literature, Linguistics, Political Science and Sociology. Graduate students in History, Political Science, Architecture, Design and Sociology can pursue independent studies in connection with the Institute for Developmental Studies, Institute of African Studies and the Housing and Research Development Unit. Excellent opportunities for research are also available in Veterinary Science.

Mexico

The National Autonomous University of Mexico (UNAM)

The Study Center operates in coordination with the UNAM School for Foreign Students. California students fully merge under the "Junior Year Abroad Program" conducted by UNAM. They share in all academic facilities and services provided by the School for Foreign Students.

The School for Foreign Students offers a wide range of courses in Spanish Language and Literature, History of Latin America and Mexico, Sociology and Political Science, History of Art, and Studio Art.

All students must have completed two years of Spanish at the University level or the equivalent to be eligible for the Program. An intensive language course precedes the fall semester for all students not fully proficient in the language.

Courses offered in the *Facultades* (regular University courses) are of high academic quality and a full range of curricular offerings are available to well qualified UC students, as their schedules permit.

Norway

University of Bergen

An intensive course in Norwegian (mid-June to mid-August) precedes the beginning of the academic year at Bergen. For the first several weeks of the Intensive Language Program, students live

in Oslo, followed by language study in rural Norway. Intensive language study is continued into the fall semester at Bergen. University courses are taught in Norwegian, and although tutorials are not usual in the Norwegian system, they can be arranged for those with language difficulties. Norwegian students study one subject within a definite program; therefore, American students are advised to concentrate on one field of study—usually their major or a closely allied discipline.

Courses are offered in the following fields: Anthropology, Art History, Biology, Botany, Chemistry, Economics and Business Administration, Geography, Geology, Geophysics, History, Mathematics, Norwegian, Oceanography, Philosophy, Physics, Psychology, Religious Studies and Sociology.

Peru

Pontificia Universidad Católica

Through its affiliation with the Southern California Conference on International Studies (SOCCIS), a consortium of public and private institutions of higher learning in California, and in cooperation with Indiana University, the University of California offers serious, advanced students majoring in Latin American Studies an opportunity to study in Lima at the Pontificia Universidad Católica del Perú. The academic year begins in mid-August and ends in late July. UC students are required to attend for the full academic year.

Instruction in Peru begins with a six week pre-session which includes course work in the language and culture of Peru. While students may enroll in most departments of the Universidad Católica, the well established courses in Anthropology and Ethnohistory have had special appeal. These comprise a curriculum with a strong focus on the societies and cultures which have made modern Peru, within a context of the Andean and general Latin American societies. Independent study and field work is arranged for both graduate and undergraduate students.

Sierra Leone

Fourah Bay College

Beginning in the 1980-81 academic year, the Education Abroad Program will enable a limited number of highly qualified, UC graduate and undergraduate students to study at Fourah Bay College in Freetown, Sierra Leone. Selection is made on the basis of scholarship, field of specialization, motivation, and ability to adapt to an African environment. Study is based on the British system, with most courses taught in English; students are expected to restrict their course work to their major or closely related field while in Africa. Fourah Bay College offers courses from a variety of related fields which are usually taught from an African perspective and with an African emphasis. Academic

fields of study include: Demography, Economics, Education, Geography, History, Literature, Marine Biology, Oceanography, Religious Studies, and the Social Sciences.

Spain

An intensive language program in Spain precedes the fall semester at the Universities of Barcelona and Madrid, the two universities which comprise the UC program in Spain. All instruction at both institutions is in Spanish. Students submit a single application for Spain, but may indicate a preference as to place of study. Final assignment is based upon the available curriculum, the student's academic program and personal preference. The Program in Madrid is supervised by a UC faculty member; the Program in Barcelona for 1980-81 will be supervised by a faculty member from the University of Illinois.

University of Barcelona

Established as an outreach of the Madrid Program, the Barcelona Program permits a limited number of qualified UC students to spend the academic year in an environment somewhat removed from the more intense pace of life in the capital and offering specialized, regional cultural opportunities. The Program, which is offered in cooperation with the University of Illinois, provides the means of becoming familiar with the Catalán culture, its language and literature, while pursuing standard courses in Spanish. In the past, students have benefited through enrollment in Spanish Art, History of Spanish Institutions, Spanish Music, Latin American Literature, and Spanish Literature.

University of Madrid

A core program, organized for the UC Study Center and other American programs, consists of courses in the following fields: Art History, History of Spain and Spanish America, Spanish Folk Music, Political Science (with special reference to Spain and Latin America), Sociology, Spanish and Spanish American Literature and Linguistics.

In addition to the core program students are required to enroll in one or more regular University of Madrid courses, to which tutorials will be assigned. In the past, students have enrolled in Anthropology (cultural), Economics, History, Linguistics, and Social Psychology at the University of Madrid.

Sweden

University of Lund

Students who are not already fluent in Swedish will study the language in an intensive summer course. This study is continued into the fall semester for all students at the Center at appropriate levels until the student has gained the equivalent of two years of language study. Because of the time demands of the fall intensive course, the beginning student

should not count on taking many courses in an academic discipline during the fall. While proficiency in Swedish is being increased, a small number of University courses may be available in English. Normally, students are enrolled in courses taught in Swedish during both the fall and spring semesters. Under the Swedish system, a student studies one major. Tutorials can be arranged when needed.

Courses are offered in the following fields: Anthropology, Architecture, Art History, Biology, Botany, Chemistry, Economics, Geography, Geology, History, Law, Linguistics, Mathematics, Music, Philosophy, Physics, Political Science, Psychology, Religious Studies, Scandinavian Studies, and Sociology.

Togo

University of Benin

The Education Abroad Program, starting with the 1980-81 academic year, will enable a limited number of highly qualified UC graduate and undergraduate students to study at the University of Benin which is located on the outskirts of Lomé, the capital of Togo. A year-long program is being planned which will enable students to participate in an extended intensive language program in France, followed by an archeological field project combined with orientation, and University classes in Togo. Classes at the University of Benin are taught in French. Selection is made on the basis of scholarship, field of specialization, motivation, and ability to adapt to an African environment. Students will be expected to restrict their course work to their major or closely related field while in Africa. The University of Benin offers courses from a variety of related fields which are usually taught from an African perspective and with an African emphasis. Academic fields of study include: Applied Social Sciences, Economics, Geography, History, International Relations, Law, Literature, and Philosophy.

United Kingdom and Ireland

The University of California Education Abroad Program currently includes more than a dozen institutions in England, Scotland and Ireland. The highly competitive nature of the Program together with the individual attention given to placement makes early application necessary. Students may indicate a preference for the host university but final assignment is made in the Study Center and is based on the student's academic field and available courses.

The number of University of California students admitted to each university depends on the spaces available in any given department. Once accepted into a university department in an area of specialization, the student is usually expected to pursue studies in that department only. With only a few exceptions, students may not take courses in other departments or colleges. Tutorials are an integral

part of any course of study and constitute the greater part of a student's load at Sussex. The following enumeration of fields of study at individual universities gives an indication in which departments students have been enrolled in the past. In coming years, depending on availability of spaces and on the applicants' needs, other fields may be added. Participation by UC graduate students in any of the United Kingdom/Ireland Study Centers is extremely limited, if not impossible. Graduate students should consult with the EAP Academic Advisor in this regard.

London School of Economics

Social and Cultural Anthropology, Economic History, Economics, Geography, International Relations, Law, Mathematics, the Social Sciences, Sociology.

Polytechnic of Central London

Architecture, Business/Management Studies, Communications, Computer Science, Engineering, Law, Linguistics, Social/Public Administration, the Social Sciences, Urban Studies.

University of Birmingham

African Languages & Studies, Biological Sciences, Chemistry, Dramatic Arts, Economics, English, Geography, History, Mathematics, Philosophy, Physics, Political Science, Psychology, and Social Administration.

University of Dublin, Trinity College

Art History, Economics, English, History, Mathematics, Philosophy, Psychology. Trinity encourages some students to follow a program in General Studies, that is, general courses in the Humanities.

University of Edinburgh

Anthropology, Art (studio: Edinburgh College of Art; History: University of Edinburgh), Biological Sciences, Chemistry, Economics, English, History, Linguistics, Mathematics, Philosophy, Physics, Political Science, Psychology, Sociology. Students wishing to study in the Department of Music must take qualifying examinations before enrolling. Examinations are given after arrival in Edinburgh in mid-September.

University of Exeter

All standard courses through the Faculty of Arts and Science. Special emphasis within the Faculty of Social Studies in Economic History, Economics, Geography, Law, Politics, Psychology and Sociology.

University of Kent

Humanities, Natural Sciences and Social Sciences.

University of Leeds

Offers a wide variety of studies in the Humanities, Social Sciences, and Sciences. There are also departments of Agriculture, Engineering, and Management Studies.

University of London, Westfield College

Special opportunities for UC students in Drama. Courses also available through a wide range of offerings in the Humanities and in Science. Special emphasis in Environmental Science and in Marine and Freshwater Biology.

University of Oxford

Biology, Botany, Chemistry, English, Philosophy, Physics, Political Science.

University of St. Andrews

Biological Sciences, English, History, Mathematics, Philosophy, Physics, Religious Studies. Courses in elementary language instruction for non-language majors are available.

University of Stirling

English, History, Philosophy, Psychology. Students

are free to take courses outside their field of specialization.

University of Sussex

Art History, Biological Sciences, Chemistry, English, History, Mathematics, Philosophy, Physics, Political Science, Psychology, Sociology.

University of Warwick

Dramatic Art, English, History, Political Science.

USSR

Leningrad State University

The Program at Leningrad State University is cooperative and involves a number of other American universities with arrangements coordinated through the Council on International Educational Exchange (CIEE). Selection is highly competitive and is conducted on a national basis through written examination, interviews in Russian and prepared statements of purpose. Three years of Russian at the University level are a firm requirement. Enrollment is for four months in either a spring or fall semester or for an academic year with a Social Science specialization. The semester Program is designed primarily for language majors, but is also open to students of Literature, History, Area Studies and other disciplines. The curriculum is limited to Russian Language and Civilization.



G Registration Regulations



G1 Registration

Every UCSB student must register at the beginning of each quarter. The registration process includes payment of fees, enrollment in courses, and the filing with the Registrar of the completed registration forms at a specific time. Complete details of this procedure are contained in the *Schedule of Classes* which is available approximately two months before the beginning of each quarter. The *Schedule* is mailed to all new students and can be purchased at the Campus Bookstore in the University Center (UCen).

Students with outstanding financial obligations to the University may not register until these are paid or officially deferred. The Business and Finance Office has authority to make extensions of financial obligations.

Undergraduate students who are subject to academic disqualification may not register until and unless they are reinstated on academic probation by the dean of their college or school as described in **E7**. The dean of the student's college has the right to set conditions for probationary reinstatement of any academically disqualified student.

A graduate student must register each quarter

until completion of the degree requirements and must maintain a grade point average of at least 3.0 in all upper division and graduate courses. Failure to register or to petition for an official leave of absence will constitute presumptive evidence that a graduate student has withdrawn from the Graduate Division. A graduate student who fails to register and who wishes to resume studies after a lapse in graduate status will be required to file a reapplication form and pay a non-refundable \$20 fee. Readmission is not guaranteed. See **I** for more information concerning graduate status.

Medical evaluation requirement

A new student or a returning student who has not been officially registered on this campus for a year or more is required to submit: **1)** A completed medical history (UCSBSH Form 1A); **2)** A report of a tuberculin skin test or chest X-ray performed within the past 12 months.

It is strongly recommended that students have a physical examination by a personal physician within one year prior to the first day of classes at UCSB. An examination is required for students who plan to participate in athletic activities or to enter the teaching field. UCSBSH Form 1B is available on

the reverse of Form 1A for reporting this physical examination.

When these medical forms are received at the UCSB Student Health Service they will be reviewed and if there are any areas needing clarification, the student will be requested to report to the Student Health Service. See **D3** for further information about the Student Health Service.

G2 Study Lists

At the beginning of each quarter, students must file with the Registrar an official Study List of courses which they intend to complete that quarter. The *Schedule of Classes*, which may be purchased in the Campus Bookstore, contains instructions for arranging and filing the Study List. Changes in the official Study List after it has been filed can be made only by petition and no later than the deadlines published in the *Schedule of Classes* for that quarter. These changes include course drops, additions, or alterations in the grading options. Unapproved withdrawal from or neglect of a course on the Study List will result in a failing grade.

Undergraduate Study List Limits

The **average** academic study load for undergraduate students is 15 units per quarter. (Information about Study Lists for graduate students is contained in the *Graduate Division Announcement* which may be obtained from the Graduate Division Office.)

The **minimum** full-time study load is 12 units. Students who are not able to carry at least 12 units per quarter must petition to enroll in a **deficit** program at the time of pre-enrollment. Further information concerning pre-enrollment and petitioning is contained in the **Schedule of Classes**.

Students who are not able to attend the University full time due to extensive outside obligations such as full time employment or family responsibilities, or due to other factors such as medical difficulties, may petition to take fewer than 12 units per quarter. Students in the College of Letters and Science may petition for permanent approval of deficit programs. (See the *Letters and Science Announcement* for details). See also **C2** for information concerning reduced fees for students who have permission to carry 8 1/2 or fewer units per quarter.

The **maximum** number of units allowable per quarter varies among the colleges. These limits are published in the *Schedule of Classes* and in the college announcements. Students who wish to enroll in more than the maximum number of allowable units must petition for an **excess** program at the time of pre-enrollment.

Filing for degree candidacy

Students are responsible for reviewing their academic progress to determine that all degree requirements have been met. All candidates for de-

grees must announce their candidacy for graduation by the deadline given in the *Schedule of Classes*, either by filling in the appropriate space on the Student Data Sheet at the time of packet filing or by filing a Declaration of Candidacy form with the Registrar at the beginning of the quarter but no later than the end of the third week of classes in the quarter in which the degree is anticipated.

Students who discover that they are not eligible to graduate as planned should file with the Registrar a Withdrawal of Candidacy Form for that quarter. A new Declaration of Candidacy Form must be filed for the new date of graduation.

G3 Absence and withdrawal

Temporary absence during a quarter

Undergraduate students registered at UCSB who have been or will be absent from classes for a brief period of time for reasons beyond their control should notify the Office of Student Services. Regardless of the reasons for absence, students will be required to complete all course work.

If an absence is late in the term and prolonged, making it impossible to complete the course work on time, students may petition their instructors to assign an Incomplete (I) grade. To receive an I grade, the approved petition must be submitted to the Registrar by the last day of the quarter in which the I is to be assigned. A student who is unable to make this request personally may ask the Office of Student Services to notify each instructor of the circumstances of the absence and to circulate a petition on the student's behalf. If the instructor agrees that an extension of time for completion of the course is justified and approves the petition, a grade of Incomplete will be assigned. See **G6** for the complete details concerning I grades, including the deadline for making-up the missing course work.

Withdrawal from a course

To withdraw from a course after the established deadline each quarter, undergraduates must petition and obtain the approval of the dean of their college as stated in the *Schedule of Classes*. The dean may cancel the student's enrollment in the course or may excuse the student from attending the course and direct the Registrar to enter a grade of F or Not Passed (NP), as appropriate, on the student's record. The dean may also stipulate that future enrollment in the same course be subject to the dean's approval.

Complete withdrawal

A registered student who withdraws from the University during a quarter without completing the quarter's work must obtain from the Registrar's Office a Petition for Complete Withdrawal. If the petition requirements are met and the approval of the college dean is secured, the student's registra-



tion will be cancelled without penalty. Undergraduate students in good academic standing who plan to return to UCSB within one, two, or three quarters may apply for a **Planned Educational Leave**, as described below under *Leaves of Absence*. A student who receives permission to withdraw completely during the early weeks of a quarter may be entitled to a partial refund of fees for that quarter as outlined in **C2** and in the *Schedule of Classes*. Upon request, the Office of Student Services will process a *Petition for Complete Withdrawal* for a student who cannot do so personally. If the dean of the student's college approves the petition, the student's registration will be cancelled without penalty.

Students who discontinue work during a quarter without an approved petition for withdrawal will receive F, NP or U (Unsatisfactory) grades, as appropriate, for all courses in which they are enrolled for that quarter. Such students are ineligible for any refund of fees, and their future registration privileges may be curtailed or revoked.

Students are advised to seek counsel from faculty, departmental, or college advisers, and/or the Counseling Center before withdrawing so as to consider the full implications of this action.

After withdrawal and before future registration, undergraduates must apply for and receive permission to be readmitted, as noted below and in **G7**. Graduate students must apply for readmission as noted in the *Graduate Division Announcement*.

Lapse of status

Lapse of status is the automatically enforced withdrawal of a student from the University. A student's status may be lapsed: **1)** for failure to file the registration packet by the deadline stated in the *Schedule of Classes*; **2)** for failure to settle financial obligations when due or to make satisfactory arrangements with the Cashier as noted in **C2** if payment cannot be made; **3)** for failure to respond to official University notices. Students who have had their status lapsed are required to pay a pro-rated portion of all assessed fees up to the date of such lapse in accordance with the fee refund schedule in **C2** and in the *Schedule of Classes*.

Leaves of absence

At the conclusion of any quarter, an undergraduate may leave the University for one or more quarters **without petition** provided he/she has not paid fees for the following term. Petitioning for complete withdrawal is required only when an undergraduate withdraws during a quarter, or is requesting a refund of fees for the following quarter. In order to register again undergraduates must apply for readmission (see below). See the **Graduate Division Announcement** for regulations governing leaves for graduate students. Undergraduates in good academic standing may apply for a **Planned Educational Leave** for a period of one, two, or three quarters. Petitions for a PEL are avail-

able from the Registrar. PEL participants are guaranteed readmission to UCSB at the conclusion of their planned leaves.

Readmission

Undergraduate students who wish to register at UCSB after having been absent or after complete withdrawal or cancellation of their registration must file an application for readmission with the Registrar. Those who are absent only for the Winter Quarter must notify the Registrar of their intention to register for the following Spring. Official transcripts of any work attempted elsewhere in the interim must be submitted. Readmission is generally approved for students who were on regular academic status when they left the University provided that course work completed elsewhere in the interim is satisfactory. The opening dates for readmission application are noted in the Calendar at the beginning of this catalog. The application periods are subject to closure without notice.

Participants in the Planned Educational Leave Program described above need not make a separate application for readmission provided they return in the quarter designated on their PEL application.

Any undergraduates who were on reinstatement-probation or who were subject to academic disqualification when they left the University will not be readmitted unless they are reinstated by the dean of their college. The dean may establish the conditions of such reinstatement.

G4 Additional enrollment opportunities for undergraduates

Concurrent enrollment (Simultaneous registration)

Students who wish to enroll simultaneously in undergraduate courses at UCSB and at another college-level institution must obtain the **prior approval** of the dean of their college. Normally, such concurrent enrollment (simultaneous registration) is approved only for courses not offered at UCSB.

Simultaneous registration in two colleges or schools at UCSB (such as Engineering and Letters and Science) also is subject to the approval of the deans of the schools or colleges involved.

Enrollment in University Extension courses

An undergraduate student wishing to complete courses through University Extension must obtain prior approval by petition to the dean of the student's college. Extension courses are not included in determining grade point averages at the University of California.

UC Extension courses in the 1-199 series may be counted toward graduation upon petition. Degree credit is rarely given for UC Extension courses

in the X300 and X400 series. See **A5** for additional information concerning University Extension. Graduate students should consult the *Graduate Division Announcement* for further information concerning Extension courses.

G5 Examinations

Final examinations

Final examinations are required in all undergraduate courses except those specifically identified in the *Schedule of Classes*. The dates and times of all finals are official as published in the *Schedule of Classes*. No instructor is authorized to change these times. Students are responsible for arranging their programs so that their final examinations will not conflict.

Normally, examinations will be written, and a maximum time period for their completion will be announced in advance. No student will be permitted to exceed this maximum. The maximum time for a final in a non-laboratory course is three hours. Individual exceptions from finals are not permitted except in the case of comprehensive examinations.

Comprehensive examinations

At the end of a quarter in which a student expects to graduate, the major department may: **1)** examine the student's competency in the major field; **2)** exempt the student from final examinations in courses offered by the department during that quarter; and **3)** with the approval of the Committee on the Undergraduate Courses, assign a credit value to such general examination.

Credit by examination

A student registered in a fall, winter or spring quarter (but not summer session), may petition to earn credit by examination during that quarter in an established course or in a subject appropriate for inclusion in the University curriculum. All petitions for credit by examination must be approved by the dean of the student's college in advance of the examination date. Ordinarily, credit by examination is limited to a total of 12 units.

Unit and grade point credit for courses taken by examination will be recorded on the student's official transcript and, provided that the examination was taken on the letter grade basis, will be computed in the cumulative University of California grade point average. Students who wish to take credit by examination on a *Passed-Not Passed* basis may do so only if they are eligible to take courses on that basis during that quarter and if the course is open to that option. Since failure to pass the examination will be recorded as an F or NP, whichever is appropriate, the student is encouraged to prepare fully for the examination before attempting it. See **G6**.

Credit by examination will not be approved for: 1) the purpose of repeating a course; **2)**

courses in subjects in which the student has completed more advanced work; **3)** basic courses in a student's native language. See the language department entries in **N** for specific credit limitations.

Further information on applying for credit by examination may be obtained from the college or school offices.

G6 Units and grading systems

Grades

The following grades are used to report on the work of UCSB students: (See also I-3)

Undergraduate Courses	Graduate Courses
A (excellent)	A (excellent)
B (good)	B (good)
C (adequate)	C (adequate)
D (barely passing)	D (poor)
F (not passing)	F (not passing)
P (passed)	S (satisfactory)
NP (not passed)	U (unsatisfactory)
I (incomplete)	I (incomplete)
IP (in progress)	IP (in progress)

The grades A, B, C and D may be modified by plus (+) or minus (-) suffixes. Grade-points per unit are assigned by the Registrar as follows: A+ = 4.0; A = 4.0; A- = 3.7; B+ = 3.3; B = 3.0; B- = 2.7; C+ = 2.3; C = 2.0; C- = 1.7; D+ = 1.3; D = 1.0; D- = 0.7; and F, I, IP, P, NP, S, and U = 0. Unit credit, but not grade-point credit is assigned for P and S grades. Students in the College of Creative Studies should refer to **K3** for a description of the grading system in that college.

Units of credit

Credit for academic work at UCSB is expressed in *units*. The value assigned to a course is determined at the rate of one unit for each three hours of student work per week. The unit value assigned to a course is determined by the number of class meetings per week and by the student's class preparation time.

Class status

Undergraduate classification is determined by the number of units completed.

Classification	Units Required
Freshman	0-40 units completed
Sophomore	40.5-83.5 units completed
Junior	84.0-134.5 units completed
Senior	135.0 or more units completed

Incomplete grades

The following regulation applies to I grades assigned for or subsequent to Fall 1979. I grades earned prior to Fall 1979 are subject to the regulations in effect for the year in which they were assigned, as described in the General Catalog for that year.

Petitioning Process- The grade Incomplete (I) may be assigned when a student's work is of passing quality but is incomplete. An I grade may be placed on a student's record only if the completed "Request for an I Grade" form, signed by the instructor, with the necessary processing fee paid, is on file in the Registrar's Office by the last day of the quarter. The instructor must indicate on the petition:

- a) The reason for the assignment of the I;
- b) The student's grade to that point;
- c) The nature of the course work to be completed;
- d) The percentage of the final grade to be based on that work; and,
- e) The deadline for submitting that work, if earlier than the standard one-quarter deadline below.

Copies of the approved I grade petition will be sent to the student, the instructor, the chairperson of the department offering the course, and the dean of the student's college. In the absence of the form, or of a specific grade other than I, the Registrar shall record a grade of F, NP or U.

Completion Deadline- The student is entitled to have the grade of Incomplete replaced by a passing grade as determined by the instructor concerned, and to receive unit credit and appropriate grade points, upon satisfactory completion of the course work *by the end of the term following the term in which the I grade was reported*, whether or not the student is registered or the course is offered. Unless the work is completed and a grade is reported to the Registrar by the deadline, the I shall be changed automatically to F, NP, or U, as appropriate. If the instructor is unavailable, the chairperson of the department in which the course was offered is authorized to supervise completion of the work and to make the appropriate grade change.

The chairperson also has authority to extend the deadline for completion in the event of unusual circumstances that would clearly impose an unfair hardship on the student if the original deadline were maintained. A copy of each authorization of extension will be sent to the Dean.

These deadlines do not apply to the following graduate courses: 594, 595, 596, 597, 598, or 599. Incomplete grades in these courses must be replaced by a letter grade or S or U, as appropriate, by the end of the last quarter in which the student is registered prior to receipt of the master's or doctoral degree.

An I grade on the student's record at the time of graduation in a course not necessary for the fulfillment of degree requirements may be removed only up to the end of the fifth week of the term following

the date of graduation. If not removed, it will not be changed to an F or NP but will remain an I permanently.

Grade Changes to Incomplete- A grade may be changed to an I only with the approval of the dean of the student's college and successful completion of the above petitioning process.

In Progress grades

The grade IP (In Progress) may be assigned provisionally in each but the last term of special courses extending over more than one term. In the last term, the letter grade assigned by the instructor replaces the provisional IP grades for all portions of the course. In the event the full sequence of the course is not completed in the last quarter, the grade IP will be replaced by the grade I and further changes of that grade will be subject to the conditions covering Incomplete grades. IP designations are not included in the computation of grade-point averages. IP courses are identified by special symbols in the *Schedule of Classes*.

Passed/Not Passed grades

Passed/Not Passed (P/NP) grades are not included in the computation of University grade-point averages. Courses graded P, however, are acceptable for unit and appropriate degree credit. P grades will be assigned only for course work equivalent to a **C or better** on the letter grade basis. NP grades will be assigned for work equivalent to a C- or below. No credit is given for courses graded NP.

Undergraduate courses may be offered exclusively on a P/NP basis with the prior approval of the appropriate faculty committees. Such courses are specially identified in the *Schedule of Classes*. Students on academic probation, as well as those in good standing, may take such courses without special approval.

Students may elect the P/NP grading option provided they meet the following conditions:

1) They are in good academic standing (i.e., not on academic probation). However, students on probation may enroll in courses offered exclusively on a P/NP basis. See

E7 for definition of academic probation.

2) The course is open to all qualified students on this basis and is so advertised in the *Schedule of Classes* or its supplement.

3) The course is not required or accepted for the student's major. Courses in the major, whether lower or upper division, in or outside of the major department, must be taken for a letter grade.

With the prior approval of appropriate faculty committees, a department may specify that certain "major" courses may be taken P/NP. Courses for which such approval has been granted are identified in the major requirement entries in **N**.

4) They elect this option on their study list at the time of registration or thereafter by petition not later than the end of the seventh week of classes. Students are responsible for determining whether they are qualified for enrollment in courses on a

P/NP basis according to the requirements stated here.

5) At the time of graduation they will have earned at least two-thirds of their units earned in residence at UCSB on a letter grade basis. There is no limit on the number of courses which may be taken P/NP during a single quarter.

6) They have not been restricted or prohibited from the use of the P/NP option due to an excessive number of NP grades earned. Students with more than 8 units of NP grades in one quarter or with more than 20 units of NP grades in all terms of University enrollment combined may be so restricted. In the case of repeated courses in which the initial grade was NP, the original NP will not be included in this 20 unit total.

7) Students who take "major" courses in excess of minimum major requirements may elect the P/NP option for those courses.

Repetition of courses

Certain undergraduate courses may be repeated for credit. These courses are identified in the course listings in **N**.

Repetition of unauthorized courses is subject to the following conditions. These regulations govern only those courses completed in the University of California, excluding those taken in UC Extension:

1) A student may repeat only those courses in which a grade of D+, D, D-, F or NP was awarded. Such courses may be repeated for letter or Passed/Not Passed grades if the courses are so offered and if the student is eligible for that option. In no case, however, shall an NP grade replace an earlier letter grade in the computation of the grade point average. A course in which an NP has been received may be repeated on a letter grade basis if so offered.

2) Students who repeat a course more than once must obtain the prior approval of their college dean.

3) Degree credit for a course will be given only once, but the grade assigned at each enrollment will be permanently recorded on the student's transcript.

4) In computing the grade point average of an undergraduate who repeats courses in which grades of D+, D, D-, or F were received, only the most recently earned grade and grade points in each course will be used for the first 16 units repeated. In the case of additional repetitions, both initial and repeated grades will be averaged together in the computation of the grade point average.

5) Students who plan to repeat a UCSB course at another UC campus, or vice versa, must petition the dean of their college to establish the equivalency of the courses prior to the repetition.

6) Courses taken at other colleges or universities or through UC Extension are not included in grade point average computations.

7) It is the student's responsibility to indicate on

the Study List the repetition of a course. See **G2** for additional information concerning Study Lists.

Grade changes

All grades except I and IP are final when submitted to the Registrar by the instructor in the end-of-term course report subject to the provisions given in *contested grades*, below. Thereafter, an instructor may report a correction of a grade at any time in the case of clerical or procedural error.

An instructor also may change a grade in the quarter following that in which the original grade was received if the basis for the change is found in work previously accomplished in the course as a part of the student's regular participation in class activity. However, such changes must not create inequities to others whose grades remain unaltered. No final grade (except I) may be revised by re-examination, and no letter grade may be changed to or from P/NP.

Contested Grades

A term grade assigned to an individual student may be challenged by that student on grounds that the grade was based on an evaluation of the student's work by criteria not directly reflective of course performance such as discrimination on political grounds or for reasons of race, religion, sex or ethnic origin. The initial appeal must be submitted in writing prior to the end of the quarter following the term in which the grade was assigned. The full appeal procedures and review authorities are described in detail in the Appendix of this Catalog.

If the designated authorities determine that a grade reflects unacceptable criteria as specified above, they will 1) authorize retroactive withdrawal from the course *or* 2) change the contested grade to a *P* or an *S* *or* 3) if it was offered in the College of Creative Studies, change the unit value of the course.

The above procedure is not meant to replace the normal channel of appeal for review of assigned grades (i.e. consultation with the instructor of the course, the chairperson of the department in which the course was offered, and the Campus Ombudsman). It should serve only as a final means of appeal when the normal channels have been exhausted.

Transcript of record

A record of each student's academic work is prepared and retained permanently by the Registrar. Students should check their quarterly grade reports and immediately inform the Registrar of any discrepancies.

Copies of the official transcript may be obtained from the Registrar for \$2 for the first copy and \$1 for additional copies requested at the same time. Students with financial obligations to the University



will have transcript requests withheld until such obligations have been cleared or extended officially. All transcript requests must be accompanied by appropriate payment. An authorization signed by the student is required prior to release of transcripts. Transcripts of work completed at another campus of the University or at another institution must be requested directly from the campus or institution concerned.

G7 Academic eligibility

Academic probation

Undergraduate students in the Colleges of Engineering and Letters and Science normally are subject to academic probation if their cumulative grade-point average in the University of California falls below 2.0 (C average) at the end of any quarter. While on academic probation, students are under the supervision of the dean of the college. Students on academic probation will be returned to regular academic status if they raise their cumulative average to 2.0 or above by the end of their second quarter on academic probation. See Schedule of Classes for special Study List limits for students on academic probation. See also **G6** for grading option limitations for such students. See **K** for information on academic eligibility in the College of Creative Studies and **I** for minimum grade point averages for graduate students.

Academic disqualification

Undergraduate students in the Colleges of Engineering and Letters and Science are subject to disqualification from further registration at UCSB:

- 1) If at the end of any quarter their grade point average is less than 1.5 for that quarter; or
- 2) If their grade point average for any quarter falls below 2.0 while they are on academic probation; or
- 3) If after two consecutive quarters on academic probation they have not raised their cumulative UC grade point average to 2.0 or better.

Students who are subject to academic disqualification are not eligible to register again at UCSB until and unless they are reinstated on probation by the dean of their college. See the Letters and Science Announcement for additional information.

Reinstatement

Students subject to academic disqualification may appeal to the dean of their college for reinstatement on probationary status. The dean will decide if a student may be reinstated and may set conditions for reinstatement. Reinstated students may register at UCSB under the conditions set by their dean and will be subject to the dean's supervision until they have regained regular academic status.

In order to transfer either from one UC campus to another or from one school or college to another

on the same campus, students who are on academic probation or subject to academic disqualification must obtain the approval of the dean of the college or school to which transfer is requested. Upon completion of the transfer, the student is subject to the supervision of the dean of that college or school.

Honors at graduation

To be eligible for honors at graduation a student must have completed at least 76 units *for letter grades* within the University of California (including summer session but excluding UC Extension). On the basis of these grades, awards will be made to 20% of those graduating in the following order:

Top 2.5%	= HIGHEST HONORS
Next 6%	= HIGH HONORS
Next 11.5%	= HONORS

In exceptional circumstances, students not meeting these criteria may petition the Committee on Undergraduate Honors, Scholarships, and Prizes for special consideration. Petitions must be submitted in writing through the student's major department. Students in the College of Creative Studies are not eligible for honors at graduation.

Changes in the minimum requirements for honors at graduation may be applied to individual students at any time before the student's completion of 120 units toward graduation.

Departmental Distinction will be awarded to students who successfully complete a departmental senior honors program. Enrollment in such programs is limited to 10% of senior students, and they must have a minimal G.P.A. of 3.0 to qualify. Consult individual departments for requirements.

G8 Student conduct and responsibility

Student conduct

Students registered in the University of California assume an obligation to act in a manner compatible with the University's function as an educational institution. Regulations concerning student conduct, organizations, and use of University facilities, and related matters are contained in the booklet entitled *University of California Policies Relating to Students, Student Organizations, Use of University Facilities, and Non-Discrimination*, which is available from the Office of Student Services.

Allegations of violations of campus or University regulations will be investigated by appropriate officials and may be referred to a hearing before the hearing officer or a committee appointed by the Chancellor. The Judicial Council of the Associated Students also may recommend procedures and policies for undergraduate student conduct. Organized living groups such as fraternities, sororities, and residence halls, may have self-governing

bodies to establish and enforce residence regulations.

The University has eight degrees of discipline: warning, censure, loss of privileges and exclusion from activities, restitution, interim suspension, suspension, dismissal, and exclusion from areas of the campus. The University reserves the right to make the final determination in any case of student discipline. The effect of these measures upon the welfare and education of the individual involved, as well as upon the welfare of the student body as a whole, is considered before any such disciplinary actions are taken. All such actions are administered by virtue of authority vested in or delegated by the Chancellor.

Student responsibility

Each student is responsible for compliance with the regulations printed in this catalog, in the college announcements, and in the *Schedule of Classes*, with all official notices published in the campus newspaper, with notices on official bulletin boards, and with all regulations of the University.

A student may not receive grades, transcripts of records, or teaching credentials until all University obligations have been met. A student cannot register at the beginning of any new quarter until past obligations have been satisfied or officially extended. Failure to comply with University obligations may result in lapse of status. See **G3** for an explanation of "lapse of status."

It is the student's responsibility to secure the consent of the instructor before enrolling in a course having prerequisites which the student has not completed. A student may take courses which may involve a low level of psychological, sociological or physical risk as part of normal classroom routine. The instructor is responsible for apprising students of such risks. Nevertheless, each student must satisfy the requirements stated throughout

this catalog in order to obtain a degree. Notices of change of name and/or address must be reported to the Registrar immediately.

Student work

All material of whatever nature submitted by a student in satisfaction of all or any portion of a course requirement is the property of the University and is not subject to any claim on the part of the student who has submitted it.

Any material produced by a student independent of any course requirement must be removed by the student from the University premises no later than the last day of the quarter in which the material was produced. The University assumes no obligation to hold or safeguard such material and the risk of possible destruction, loss or other disposition is assumed solely by the student.

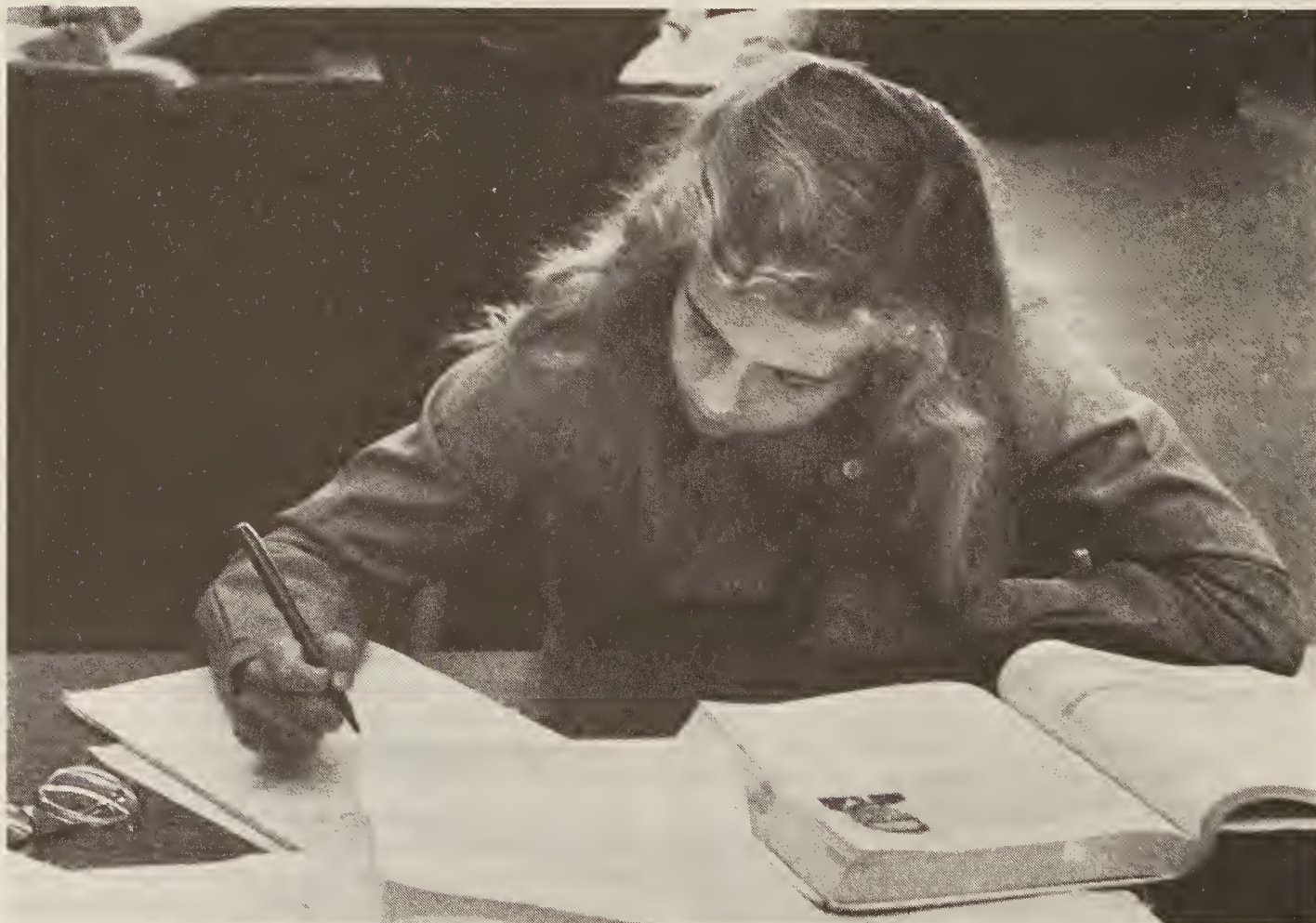
Authority of instructors

All students must register and have their enrollment approved by the appropriate study list authority before entering any organized instructional activity at UCSB as described in the *Schedule of Classes*. Each instructor has the authority to determine whether or not a student is sufficiently prepared to enter upon or to continue in the study of that instructor's subject. See **G2** for an explanation of Study Lists.

However, an instructor may not exclude a student from a course for political grounds or for reasons of race, religion, sex, ethnic origin, handicap, or for other arbitrary or personal reasons. If a student believes that such criteria were used in excluding that student from a course, the student may challenge the instructor's decision by means of the procedures given in the Appendix to this Catalog.



University Bachelor's Degree Requirements



H1 Introduction

To be eligible for a bachelor's degree from the University of California, Santa Barbara, students must meet the general University requirements given below and the appropriate college and major requirements described in the later sections of this catalog and in the announcements of the colleges. They must also comply with University regulations governing registration, scholarship, examinations, and student conduct. Further information concerning these requirements is available elsewhere in this catalog, from the Registrar's Office, the offices of the college deans, and the Office of Student Services.

H2 Subject A - English composition

Every undergraduate must demonstrate an acceptable level of ability in English composition. Satisfaction of the Subject A requirement is determined by the Office of Admissions at the time a

student is admitted to the University. International students must refer to **E2** for the English language requirements specific to them.

The Subject A requirement may be met in one of the three following ways:

1) By achieving a score of 600 or higher on the College Entrance Examination Board (CEEB) Achievement Test in English composition (See **B2**);

2) By achieving a grade of 3 or higher on the CEEB Advanced Placement Examination in English Composition and Literature (see **L3** and **M4**);

3) By entering the University at the freshman or advanced standing level with transcripts showing the completion of an acceptable three semester or four quarter unit college level course in English composition equivalent to English 1A with a grade of C or better. See **N**, English Department, for course description.

Advanced standing (i.e., transfer) students who enter UCSB without having met the Subject A requirement must take the Subject A Writing Sample at the beginning of the first quarter of attendance at the University. Freshmen who score from 550 to

599 on the CEEB English Achievement Test above (item 1) are also eligible to take this test. Students who pass the Subject A Writing Sample will have met the requirement. See the *Schedule of Classes* for examination time and location.

Students not meeting this requirement in one of the ways described above must complete the four unit course in Subject A during their first quarter at UCSB, or as soon as they are assigned space in the class as noted in their registration materials. Those who do not pass the course will be required to repeat it each quarter until they receive a satisfactory grade.

International students

International students must refer to **E** for the English requirements specific to them.

H3 American history and institutions

The American history and institutions requirement is based on the principle that American students enrolled at an American university should have some knowledge of the history and government of their country. The following courses contribute to that objective either by breadth of coverage of American history and institutions or by depth of concern with significant aspects and periods. **This requirement is satisfied by completion of any two courses chosen from the following list.** ("Course" refers to a one-quarter offering, e.g., History 17A):

- **Anthropology** 131, 174
- **Art History** 161A—B—F—G
- **Asian American Studies** 100A—B, 110
- **Black Studies** 1A, 101, 103, 110, 121, 124
- **Chicano Studies** 1A—B—C, 144, 168A—B, 174, 188A—B—C
- **Dramatic Art** 155
- **Economics** 113A—B
- **English** 128, 130A—B—C, 133A—B—C, 135, 138A—B—C, 141
- **History** 17A—B—C, 72, 74, 105, 108A—B, 159A—B—E, 160A—B, 161, 162A—B, 163C—D—E—G—H, 164A—C—I, 165, 166A—B—C, 167A—B—C, 168A—B, 169A—B—M, 171A—B, 172A—B, 173A—B—C, 173S—T, 174A—B—C—D, 175A—B—C, 176A—B, 177, 178A—B—M, 179, 179Q, 188Q
- **Law and Society** 100
- **Military Science** 1A—B—C, 3, 4, 5, 7, 8, 9

Note: 4 units are needed in Military Science courses to equal one acceptable course for this requirement.

- **Philosophy** 119
- **Political Science** 5, 10, 12, 15, 100, 113, 115, 117, 127, 152, 153, 155, 157, 158, 165, 166, 167, 168, 172, 173, 174, 176, 180, 185
- **Religious Studies** 151A—B, 152
- **Sociology** 118, 144, 155A, 157
- **Speech** 132A—B

Courses used to fulfill the American history and institutions requirement may also be applied to the General Education and/or major requirements where appropriate.

Equivalent courses taken at other accredited colleges or universities, in UC Extension or in summer session are acceptable as determined by the Office of Admissions. This requirement also may be satisfied:

1) By passing a non-credit examination in American history or American institutions. These examinations are offered in the departments of history and political science during the first week of each quarter. Consult the specific department for further information.

2) By achieving a score of 3 or higher on the CEEB Advanced Placement Examination in American History. See **L3** and **M4** for additional information.

International students on a nonimmigrant (F-1) visa may petition for a waiver of this requirement through the Dean of International Students and Scholars.

H4 Unit requirements

A total of 180 quarter units is required for graduation. These must be distributed according to the minimum requirements set forth by the faculty of the college as explained in the following sections and in the announcements of the colleges. **M5** contains specific unit requirements and limitations applicable to students in the College of Letters and Science.

The acceptability of transfer courses for unit credit is determined by the Office of Admissions. The applicability of such courses toward specific requirements is determined by the college deans and department chairpersons, as appropriate.

H5 Academic residence requirements

Candidates for a bachelor's degree must be registered in the University for at least **three terms** to fulfill the University's academic residence requirement. A term is a regular quarter in which a student enrolls in six or more units of resident (on-campus) courses. Each UC summer session in which at least two units are completed is the equivalent of half a term's residence. The three-term requirement can be satisfied at any UC campus.

At least 35 of the final 45 units must be taken in the college or school in which the degree is to be awarded. No more than 18 of the final 35 units may be completed in summer session courses at UCSB.

Students in the College of Letters and Science must complete while in residence in the College **at least 27 upper division units, of which at least 18 must be in the upper division major.** In the case of double majors, at least 18 upper division units must be completed in each major while in residence in this College.



Education abroad participants

Students in the Education Abroad Program are responsible for completion of all of the above academic residence requirements with one modification—with prior approval, EAP students may satisfy the 35 unit residence requirement by earning **35 of their final 90 units** (instead of 35 of the final 45) at UCSB in the school or college in which the degree is to be taken. See **A7** and **F** for further information concerning the Education Abroad Program.

Students who participate in the Education Abroad Program during the senior year may graduate without returning to UCSB, provided that 1) they have completed all degree requirements and 2) have the prior permission of their major department to do so. Seniors who have not completed all degree requirements by the end of their year abroad must return to UCSB and complete a minimum of 12 units on campus for the purpose of the residence requirement while completing final degree requirements.

H6 Grade point average requirement

At the time of graduation, students in the Colleges of Letters and Science and Engineering must have at least a **2.0 (C)** grade point average in:

- 1)** all courses undertaken in the University of California (UC), except those graded Passed/Not Passed; and,
- 2)** all UC courses required and acceptable for the student's overall major program (both lower and upper division); and,
- 3)** all UC courses required and acceptable for the student's upper division major program.

Courses undertaken at any of the campuses of the University of California, except for UC Extension courses, are included in the above computation.

Courses appropriate for satisfaction of major requirements must be utilized in the computation of the grade point average even if they are in excess of the minimum requirements of the major program. Courses graded Incomplete, except those taken on a Passed/Not Passed basis, will be included as F's in final grade point computations.

At the time of graduation, students in the College

of Creative Studies must have a grade point average of at least 2.0 (C) in all University of California courses as outlined above which are undertaken for letter grades.

H7 Major requirements

Students may elect any approved major program for which they have met the stated prerequisites. Major departments and/or committees may require auditions, placement examinations, specified courses, and/or grade point averages to determine whether students are qualified for specific courses or for entrance into or continuation in a major.

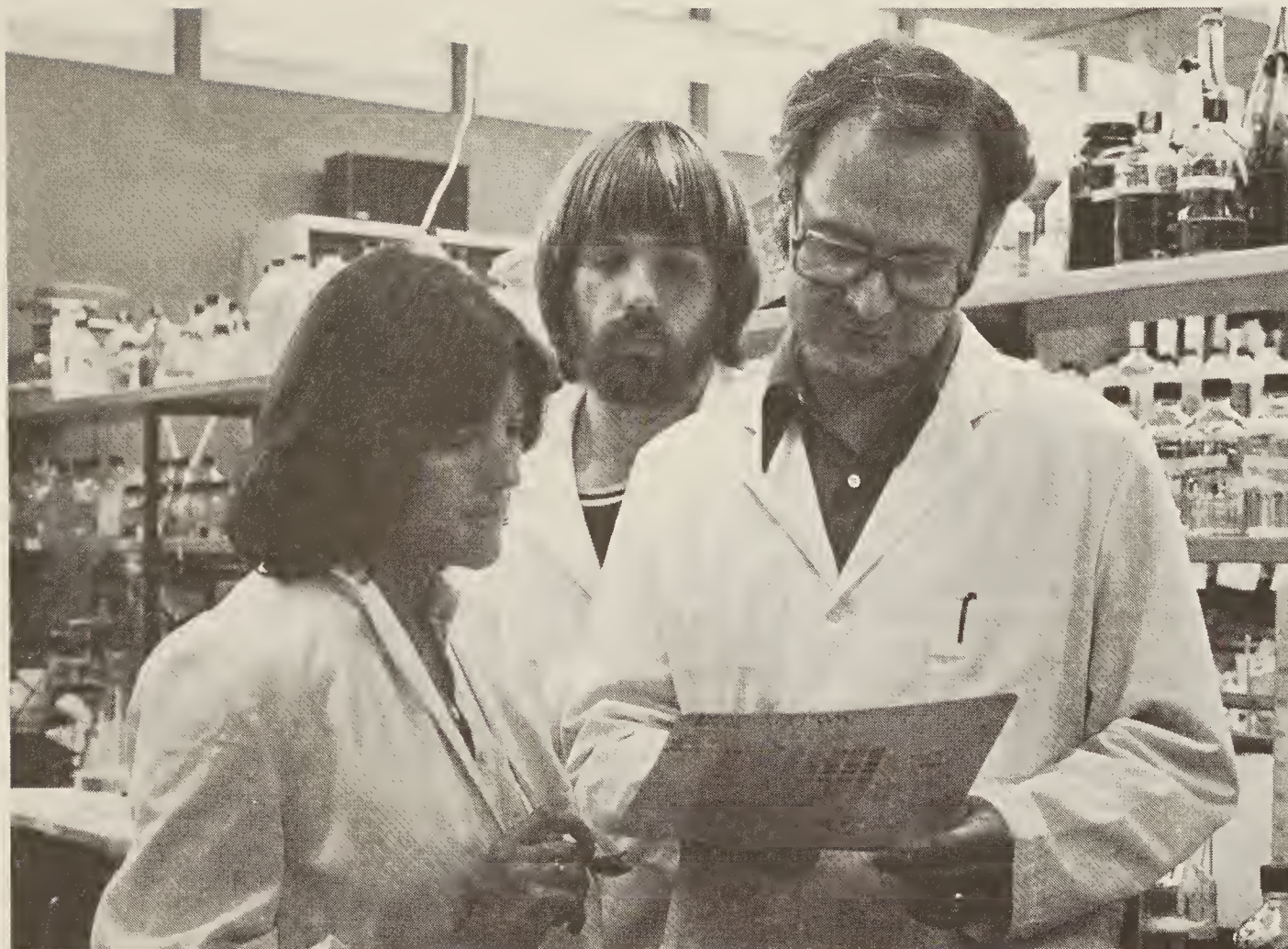
Students must declare a major from those offered in their college by the beginning of their junior year and usually may not change majors after the beginning of the senior year. All petitions to declare or change a major require the prior approval of the chairperson of the prospective major department or committee and the dean of the college.

In order to be eligible for graduation, all undergraduates must complete, with the required grade point averages above, the requirements for a departmental or interdepartmental major available to them in their college. Students in the College of Letters and Science must complete in residence at least 18 units in the upper division major as stated in **H5**. See **A6** for a complete listing of majors available.

Students who fail to attain a grade point average of at least 2.0 in work in the major may, at the option of the major department or committee, be denied the privilege of continuing in that major.

Normally students in the Colleges of Engineering and Letters and Science must complete the major requirements which were in effect at the time they declared their major. However, they may petition to follow a subsequent set of requirements. Students who were taking courses appropriate to an earlier set of requirements prior to declaring a major may complete the earlier requirements only with departmental approval, subject to the availability of formerly required courses. Changes in major requirements which increase the number or specificity of courses required will not normally be applied to continuing students in such majors.

Graduate Division



Charles E. Samuel, (r), professor of biology, conducts research on interferon in his laboratory. With him are Susan Kingsman, postdoctoral research assistant from Britain, and Brian Schryver, master's candidate in biology.

I-1 Introduction

The UCSB Graduate Division offers a wide variety of graduate study programs for qualified students from accredited colleges and universities. Admission is based on promise of success at the graduate level as determined by previous academic records.

Graduate students normally enroll in programs leading to 1) a graduate degree, 2) recommendations for teaching and specialist credentials, 3) a certificate in translating and/or interpreting, or 4) a certificate of completion of a graduate curriculum. Certificates currently offered in the Graduate School of Engineering. See section A6 for programs offering the certificate.

An applicant without one of these objectives may be admitted to graduate status in exceptional cases only.

Degrees offered

The Graduate Division offers programs leading to the degrees of Master of Arts, Master of Education, Master of Fine Arts, Master of Science, and Doctor of Philosophy. The chart in **A6** lists the subjects in which these degrees are offered.

Announcements

The *Graduate Division Announcement* is published annually and contains additional detailed information about offerings within the Division. Other publications which contain graduate information are the *Graduate School of Education Announcement* and the *College of Engineering Announcement*. Additional information pertaining to advanced degree programs is often published by the department concerned.

I-2 Admission into the Division

Applying

Students may request application materials either from the Graduate Division or, preferably, from the department of the proposed graduate major. An application form and two official transcripts from each college or university attended must be submitted by all applicants. Three letters of recommendation are also required. Many departments have additional requirements such as Graduate Record Examination scores. It is advisable to consult the department and the Graduate Division Announcement regarding additional requirements. TOEFL scores must be submitted by non-native speakers of English.

One official copy of the transcript should be sent directly to the Graduate Division. A second official copy of the transcript must be sent to the graduate adviser of the intended program. Letters of recommendation are submitted in duplicate to the graduate adviser, and are not sent to the Graduate Division.

The Graduate Division deadlines for applications for admission are:

Fall Quarter	May 1
Winter Quarter	November 1
Spring Quarter	February 1
Summer Session	May 1

Departmental deadlines may vary from the Graduate Division deadlines; specific departments must be consulted for detailed information. A \$25.00 application fee must accompany all applications and reapplications. Payment should be made by check, bank draft, or money order payable to The Regents of the University of California. This fee is non-refundable.

Approval of an application for graduate admission does not constitute a commitment on the part of the University to accept the applicant as a candidate for a degree or to recommend the applicant for a credential. Prior to the completion of requirements for a degree or credential, the University reserves the right to withdraw or withhold from any student the privilege of candidacy or of recommendation for a credential.

Filing fee

Under certain circumstances students may receive degrees without paying full fees for the quarter in which the degree program is completed. The filing fee, which is equal to half of the regular registration fee, may be paid only in the quarter in which a student plans to complete the degree.

The filing fee may only be used if the student **1)** is not registered, **2)** is not using any university facilities, **3)** is not using any faculty time other than that necessary for the committee to read and ap-

prove the thesis or conduct the final exam, **4)** has completed all requirements for the degree except either the final exam or thesis approval, **5)** is completing a terminal degree program and does not intend to continue in graduate status.

A student concurrently enrolled in both an M.A. and a Ph.D. program may not use the filing fee to complete the M.A. The filing fee may only be used once. If, for any reason, the student fails to complete the degree in the quarter covered by the filing fee, the student will have to reapply for admission and pay regular fees in order to complete the degree requirements, since paying the filing fee terminates graduate status. The filing fee does not allow a student to take course work or use UC facilities other than under the same conditions as the public may use these facilities.

I-3 Requirements and regulations

Graduate students will be expected to fulfill the degree requirements of their programs as set forth at the time of admission. If the program is altered subsequent to their enrollment, students will have the option of changing to the revised requirements or continuing with the original curriculum. The Graduate Division must be apprised of such decisions so that accurate degree checks may be made.

Graduate courses are graded either with letters A-F as described in **G6** or with S/U (Satisfactory/Unsatisfactory). Most individual graduate research and study courses are offered on an S/U basis. Credit is given only for courses graded S, which is equivalent to a B (not B-) or better. S/U courses are designated by a special symbol in the *Schedule of Classes*.

Graduate students must achieve an average of at least 3.00 in all upper division and graduate courses. Failure to maintain this average will result in dismissal or, at best, continuation on probation at the discretion of the department and the Graduate Dean. The grade point average is not, however, the only criterion for assessing success or failure in a graduate program.

Study list limits

The maximum number of units for which a graduate student may register in a quarter is based on the distribution of the units between graduate courses and undergraduate courses in the student's program. The complete list of maximum unit combinations is in the **Graduate Division Announcement**. Study lists in excess of the limits must be discussed with the Graduate Adviser before they may be signed and filed.

Applicants for the master's degree

The following regulations and requirements apply to graduate study leading to the Master's Degree:

1. Admission and Readmission: No student may be admitted to a master's degree program without the approval of the department and the Dean of the Graduate Division.

2. Preparation: The student's baccalaureate training must be substantially equivalent, both in major and in general education, to that required by the University of California.

3. Academic Residence: Students in master's programs must spend a minimum of three quarters in full-time residence at UCSB. (MFA students have a six quarter residency requirement). At least one quarter must be a regular session (fall, winter or spring quarter) during which time the student is engaged primarily in courses in the major, exclusive of thesis work. Two summer sessions of full-time work are equivalent to one quarter of residence for a master's student. A portion of the residency requirement may be waived by petition to the Graduate Council in extraordinary circumstances.

4. Program: The study program of every student who is seeking a master's degree must be approved by the individual department. Two program plans are available to students:

Plan I (Thesis) in which at least 30 units, including no fewer than 12 graduate units, are required, and **Plan II (Comprehensive Examination)** in which 36 units, including no fewer than 18 graduate units are required.

597, 598, and 599 courses are not counted toward the unit requirements of the plans listed above. These plans are guidelines, but students should consult the department for specific unit requirements which may be in excess of the minimums.

5. Candidacy: Students must indicate on their registration packets the quarter in which they intend to complete requirements for the degree. Admission to candidacy is dependent upon satisfactory completion of departmental requirements.

6. Standards of scholarship: Only upper division and graduate courses in which a student is assigned grades A, B, C or S may be counted in satisfaction of the unit requirements for the master's degree. In the case of courses specifically required for a program, a grade of A or B must be earned. Independent undergraduate studies (198/199) courses will not apply to the degree. Students must maintain a grade point average of at least 3.0 (B) during enrollment in the Graduate Division at UCSB.

Applicants for the Doctor of Philosophy degree

The following regulations and requirements apply to the degree of Doctor of Philosophy (Ph.D.):

1. Admission: A student will be accepted into a doctoral program only with the approval of the department and the Dean of the Graduate Division. Admission to graduate standing in the master's degree program does not imply entrance to a doctoral program.

2. Preparation: Students must meet the requirements for admission to graduate standing stated above and must be prepared for significant research in the specialty subject. If a student is admitted to a doctoral program with deficiencies in background or training, these deficiencies must be removed before admission to candidacy, usually during the first year of residence.

3. Academic Residence: Students in doctoral programs must spend at least six regular academic quarters (not summer sessions) in residence on the UCSB campus. Three consecutive quarters of residence must be completed prior to taking the Ph.D. oral qualifying exam. A portion of the residency requirement may be waived by petition to the Graduate Council in extraordinary circumstances.

4. Normative Time: Each Ph.D. program has an assigned time in which the degree should be completed. These times range from 4.5 to 8 years. The student must be registered continuously for all regular quarter sessions until all requirements for the degree are completed. Provision is made for up to three quarters of approved leave of absence. Students who are neither registered nor on approved leave of absence lose all status as students and must apply for readmission and, where applicable, readvancement to candidacy. Consult the **Graduate Division Announcement** for a complete list of normative times and regulations governing registration.

5. Program: The doctorate is a research degree granted by the Graduate Dean upon the recommendation of the student's doctoral committee. The Ph.D. degree is not awarded merely upon the completion of any list of courses or other requirements, but upon demonstration of the student's academic excellence and research capability. The specific program is determined by the student's doctoral committee, normally chaired by the major professor, and is designed to meet the individual needs and interests of the student.

6. Candidacy: Advancement to candidacy for a Ph.D. is possible only after satisfying all course and residence requirements, passing examinations in one or more modern foreign languages (if required by the program), preliminary departmental examinations, and an oral qualifying examination, and paying a \$25 Advancement to Candidacy fee.

7. Standards of scholarship: The rules of scholarship for students in doctoral programs are the same as those for master's degree programs.

Additional information concerning graduate degree programs can be found in **N** under the various departmental entries, in the **Graduate Division Announcement**, or may be obtained from the Graduate Division and department offices.

8. In-Candidacy Fee Offset Grant: Students who have advanced to candidacy and have not exceeded the normative time for their degree program are eligible for a merit-based grant equal to the cost of the Educational Fee.

Graduate School of Education



Graduate students gain teaching experience in local schools.

J1 Introduction

Professional work in education has long been associated with the Santa Barbara campus. The Santa Barbara State Normal School was established in 1909 as a successor to institutions which traced their roots back to the Anna S.C. Blake School, founded in 1891. In 1917, the school added a program to prepare elementary school teachers. Renamed the Santa Barbara State Teacher's College in the 1920's, the institution initiated a four-year general education program for teachers and conferred its first bachelor of arts degree in 1927.

The College became a part of the University of California in 1944. The School of Education was founded as a separate unit in 1961, and was granted graduate status in 1967. In the years since, the Graduate School of Education has retained its commitment to teacher preparation while adding programs which also prepare students for advanced specializations and disciplined research in education.

J2 Master's degree programs

All applicants for a master's degree must be admitted to the Graduate Division. Address inquiries to and *obtain* application materials from the Academic Adviser, Graduate School of Education. *Submit* ONE SET of application materials to the **Graduate Division** and ONE SET to the Academic Adviser, **Graduate School of Education**.

The Graduate School of Education offers the Master of Arts in Education and the Master of Education degrees. Within a general master's degree program, a candidate elects an area of emphasis or concentration as specified below.

The M.A. in Education and the M.Ed. are available with concentrations in Confluent Education (integration of the affective and cognitive domains of learning) or Counseling Psychology. Other concentrations within the M.A. program include Bilingual/Cross-Cultural Education, Educational Administration, Educational Psychology, Early Child-

hood Education, Instruction, International Education, and Language Development and Reading. For more detailed information concerning program requirements and content, refer to Education in section **N** and the *Graduate School of Education Announcement*.

J3 The degree of Doctor of Philosophy

The Doctor of Philosophy program is designed as preparation for research, instruction in post-secondary institutions, and expert services in a variety of other educational settings. All applicants must be admitted to the Graduate Division. Address inquiries to and *obtain* application materials from the Academic Adviser, Graduate School of Education. *Submit* ONE SET of application materials to the **Graduate Division** and ONE SET to the Academic Adviser, **Graduate School of Education**.

The concentrations for which Ph.D. candidates may be accepted are Confluent Education (integration of the affective and cognitive domains of learning), Counseling Psychology, Educational Administration, Educational Psychology, International Education, and Language Development and Reading. Doctoral work in Early Childhood Education may be pursued as part of either the Educational Psychology or the Language Development and Reading concentrations. For details concerning the doctoral program, refer to Education in section **N** and the *Graduate School of Education Announcement*.

J4 Specialist/Services credentials/certificates

The following specialist or services credentials and certificates are offered by the Graduate School of Education and may be pursued in conjunction with a master's degree.

Credentials:

- Administrative Services
- Instructional Specialist in Bilingual/Cross-Cultural Education
- Instructional Specialist in Early Childhood Education
- Instructional Specialist in Reading
- Pupil Personnel Services as a School Counselor or School Psychologist

Certificates:

- College Student Personnel Counseling Certificate
- Marriage, Family, and Child Counseling Certificate

All applicants for specialist credentials/certificates offered by the Graduate School of Education must be admitted to the Graduate Division. Specific details on admission requirements for and

the content of the various specialist and services credential and certificate offerings appear in the *Graduate School of Education Announcement*.

Inquiries about specialist or services credentials should be addressed to the Education Credential Adviser, Office of Student Teaching, Graduate School of Education. Inquiries about the two counseling specialization certificates should be addressed to Counseling Psychology Program Secretary, Graduate School of Education.

In addition, the following credentials are offered by the Department of Speech:

- Clinical Rehabilitative Services Credential in Speech, Language, and Hearing
- Educational Audiologist

J5 Teaching credentials

The Graduate School of Education offers programs of study for teaching at the elementary and secondary levels. These teaching credential programs are identified respectively as follows:

- Multiple Subject Teaching Credential
- Single Subject Teaching Credential

Inquiries concerning teaching credentials may be addressed to the Education Credential Adviser, Office of Student Teaching, Graduate School of Education. A student who expects to seek a credential should consult as soon as possible with an adviser in that office. Further information, including admission and program requirements and the content of teaching credential programs for graduate students and selected undergraduates is contained in the *Graduate School of Education Announcement*, available from the Education Credential Adviser, Office of Student Teaching, Graduate School of Education.

All post-baccalaureate candidates for teaching credentials must be admitted to the Graduate Division and are subject to the following regulations and requirements:

1. Admission and Readmission: Applications for admission to all credential programs must be reviewed by the Graduate School of Education. The final decision for admission is made by the Dean of the Graduate Division on the recommendation of the Dean of the Graduate School of Education.

2. Prerequisites: The chart which appears below identifies certain requirements for admission to the teaching credential programs at UCSB:

	Multiple Subject (Elementary)	Single Subject (Secondary)
English 106	X	X
Ergonomics 109	X	X
Mathematics 100A,B	X	
Pre Professional Experience	X	X

See M-6 for a description of the Undergraduate Diversified Program at UCSB.

3. Preparation: Applicants who complete the baccalaureate at other institutions must have substantially the same general education background and preparation in a major teaching field as required at UCSB. Deficiencies must be removed prior to admission to student teaching.

For the Single Subject Teaching Credential verification of subject matter competency in the teaching field is required. This is achieved by:

- completion of a waiver program in the teaching field within the baccalaureate degree or
- attainment of passing scores on the National Teachers Examination in the subject field to be taught if the candidate has not completed an approval waiver program.

Check with the Credential Adviser in the Graduate School of Education at the institution which awards the bachelor's degree (California institutions only) for direction as to whether or not the waiver program has been completed. Out of state bachelor's degree holders will consult with the Cre-

dential Adviser in the Graduate School of Education at UCSB for specific information.

4. Scholarship: Academic requirements for admission into teaching credential programs are identical to those for admission into advanced degree programs. Consideration is given to evidence of potential for success in teaching. Applicants who believe they have sufficient strength in other aspects of teaching preparation which may compensate for a deficient grade point average should consult the Education Credential Adviser.

Students admitted to teaching credential programs must maintain a grade point average of at least 3.0 (B) in all upper division and graduate courses. A student who fails to maintain this average is subject to dismissal from the credential program.

5. Residence: Students in teaching credential programs are required to spend three quarters in residence at UCSB. **Programs begin in the fall quarter.**



College of Creative Studies



Peter Racine Fricker is one of the most eminent of the post-war generation of British composers and a music professor at UCSB. He was named 1980 Faculty Research Lecturer -- the most prestigious honor offered by the Academic Senate.

K1 Introduction

Aims

The College of Creative Studies at UCSB is unique in the University of California. Students are enrolled on evidence of talent for independent work in an art or a science. The aim of the College is to instruct these students by all the means available to a faculty of artists and scholars whose interest is to work closely with talented undergraduates. There are no lecture classes in the College, only tutorials and seminars.

Degree and Major Offerings

Work in the College leads to the Bachelor of Arts degree. Majors available are Art (Painting or Sculpture), Biology, Chemistry, Literature, Mathematics, Music Theory and Composition, and Physics.

Announcement

The College publishes the annual *College of Creative Studies Announcement*, containing pertinent information for students. It may be obtained, along with any further information about the College, from the College office.

K2 College requirements and curriculum

Admission and Transfer

Candidates for the College must meet the entrance requirements of the University of California. Before a final decision regarding an applicant's enrollment in the College of Creative Studies will be made, a letter of application and a transcript of the applicant's scholastic record must be received by



the College. Each candidate in the arts will submit work in evidence of talent; work in evidence is helpful but not essential for applicants in mathematics and the sciences. In the arts, the evidence will be fiction, poems, paintings, sculpture, musical compositions, or critical papers; in the sciences, examples of independent research and other evidence of an exceptional capacity for intellectual pursuit, discovery, and reformulation. See **B** for information about admission requirements.

Students may apply at any time for transfer into another academic unit of the University, with appropriate credit granted for their standing in the College. Those applying for transfer to the College, if accepted, will be enrolled at the equivalent College of Creative Studies level.

Requirements

There are no specific required courses. However, in addition to completing a major, students are required to complete two courses in any field or fields related to the major, and eight courses in any field or fields not related to the major. These courses may be taken in the College of Creative Studies or in departments of the College of Letters and Science.

Students in the College are expected to work closely with their advisers. The student's program must be approved by an adviser and signed by the Provost or the Associate Provost before it can be filed with the Registrar's Office.

Courses in the College are not classified as lower and upper-division, and the only prerequisite for

enrollment in any course is the instructor's consent.

K3 Grading and unit requirements

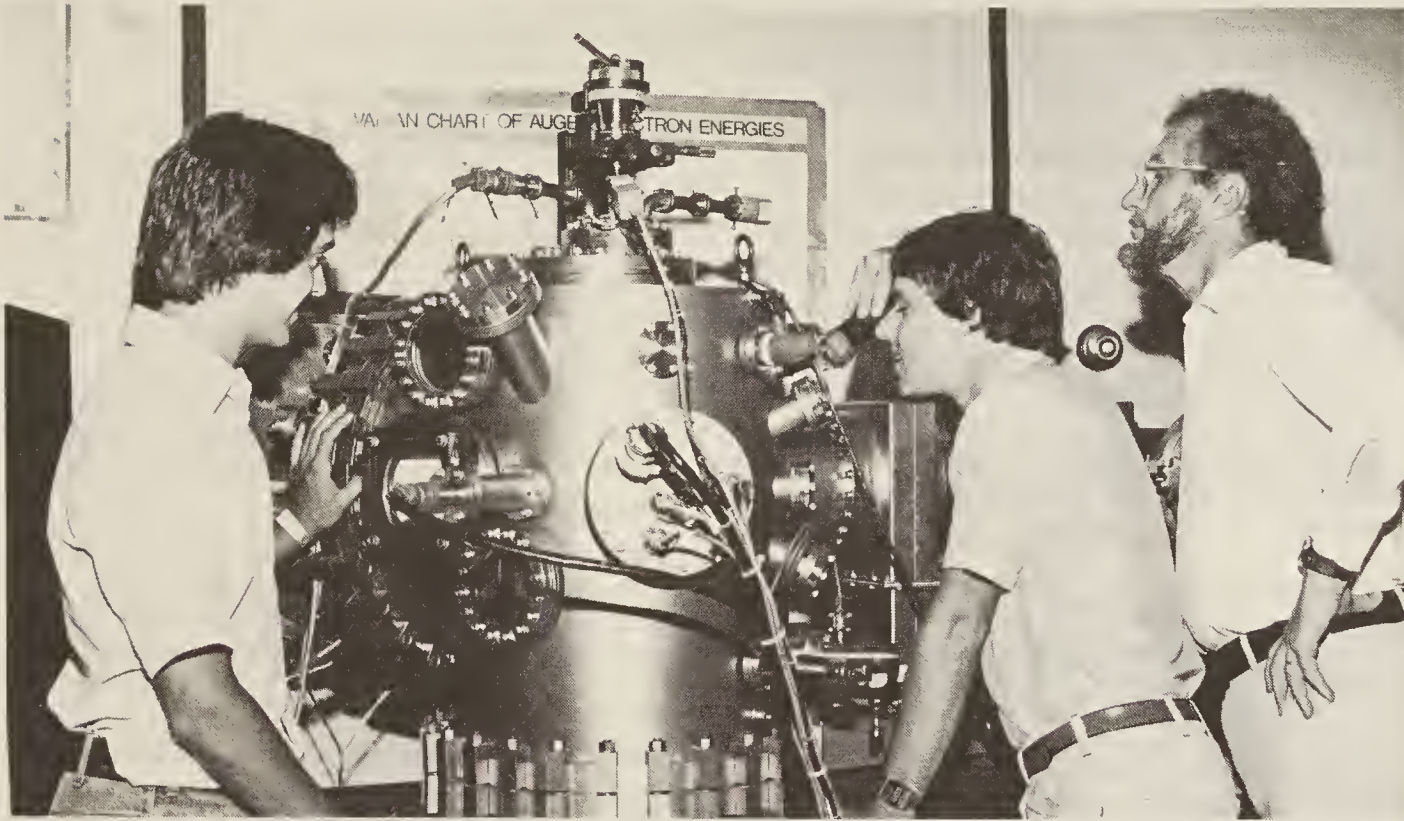
There are no letter grades in the College. The grading system is a combination of Pass/No Record and variable unit credit. For each course in the College, the student may receive any number of units from 0 to 6: 0 is No record (i.e., the course is not recorded on the student's transcript); any number of units from 1 to 6 is Pass. In each course the student enrolls for the specific number of units of work (up to a maximum of 6 units) planned during the quarter; but at the end of the quarter the instructor makes the final determination of the unit value of the student's work in the course.

Courses taken outside the College of Creative Studies will be graded according to the grading system of the college in which the courses were taken. Students are required to maintain a 2.0 grade point average in courses taken for letter grades outside the College of Creative Studies. See **G6** for information concerning the grading system outside the College of Creative Studies.

Each unit of credit earned is counted toward graduation; 180 quarter units of credit qualify the student to be evaluated for graduation, with a Bachelor of Arts degree in the College of Creative Studies.



College of Engineering



Herbert Kroemer, professor of electrical and computer engineering, (r), directs a research project using molecular beam epitaxy equipment.

L1 Introduction

Engineering programs have been offered to students at UCSB since 1961. The School of Engineering was established that year and was redesignated the College of Engineering in 1966. It is now the second largest undergraduate college at UCSB with an enrollment of about 1130 undergraduate students and 280 graduate students.

The College offers the Bachelor of Science degree and advanced degree programs in chemical engineering, computer science, electrical engineering, mechanical engineering and nuclear engineering. The chart of degrees and majors in **A6** gives an overview of the programs available.

In general, a minimum of four years will be necessary to complete the requirements for a Bachelor of Science degree. Completion of the four-year program provides background for a student to start a professional career or to enter graduate programs in engineering or computer science.

L2 Admission

Applicants wishing to enter the College of Engineering must satisfy the general University admission requirements in **B**. International students must

satisfy additional requirements in **E**.

The College strongly recommends that students who plan to study engineering at UCSB design their high school program so as to include the following courses:

Courses	High School Units, (years)
English	3
United States history	1
Algebra	2
Plane geometry!	1
Trigonometry.....	1/2
Physics or chemistry (preferably both)	1
Foreign language	2
Other college preparatory subjects...	3 1/2
	14

A student who is admitted without one or more of these prerequisite high school courses may be required to defer those UCSB courses to which they are prerequisite. It is possible that such deferment could alter the student's program so as to delay admission to upper division (see below) and graduation.

No engineering examinations are required for admission to either the lower or upper division engineering programs. Admission to the lower division (freshman and sophomore years) does not necessarily imply advancement to the upper division (junior and senior years) at some later time.

Admission to upper division

Students entering the upper division of the College of Engineering, either as transfer students or as continuing students, must select a particular curriculum within the Departments of Chemical and Nuclear Engineering, Computer Science Electrical and Computer Engineering, or Mechanical and Environmental Engineering.

Requirements for admission to upper division are the same for transfer and continuing students.

- 1. Satisfaction of the general requirements for admission to the University at the junior level for transfer students. See B3 for Advanced Standing admission requirements.
- 2. A minimum grade point average of 2.0 in a lower division program of not less than 84 quarter or 56 semester units. This program must include at least partial completion of the General Education program (see below) of the College, which encompasses the following minimum subject requirements:

Subject Requirements for Engineering

	Minimum Number of Quarter Units
Analytic geometry and calculus.....	20
Chemistry for engineering and science students)	12
Physics (for engineering and science students)	12
Engineering (subjects such as graphics, properties of materials, surveying, engineering measurments, statics, Circuits, electronics, and computers)...	15
Humanistic-Social studies	9
Unspecified subjects (9 units may be in humanistic-social studies; the remainder may be additional mathematics, chemistry, physics and engineering courses; none may be in military science or physical education)	16
	84

Subject Requirements for Computer Science

	Minimum Number of Quarter Units
Analytical geometry and calculus.....	12
Differential equations.....	4
Discrete mathematics.....	8
Discrete probability	4
Linear algebra	4
Computer Programming.....	4
Introduction to Computer Science and Computer Systems	8
Science and engineering subjects.....	16
Humanistic-social studies	16
Unspecified subjects.....	8
	84

The University will accept a maximum of 105 quarter (70 semester) units of credit for college courses completed at a community (two-year) college.

The College publishes the annual *College of Engineering Announcement* which contains information about programs, schedules, etc. Copies of this *Announcement* may be obtained by writing to the Dean. Additional information concerning the College of Engineering may be obtained from the College office.

L3 College requirements

The College of Engineering requirements are divided into two programs — the **Program of Depth** and the **Program of Distribution**. Students in the College of Engineering must complete the Programs of Depth and Distribution as well as the General University Requirements in H.

The **Program of Depth** requirements are developed through the courses of the various majors and are listed in the *Announcement of the College of Engineering* and in N . This Program is designed to provide for 1) the development of an understanding of the relationships among the basic principles of science and mathematics and the fundamentals of the more advanced engineering science and 2) a rigorous discipline in methods of analysis and solution of engineering problems.

The **Program of Distribution**, which consists of the General Education (GE) required courses listed below, is designed to introduce students to fields of study outside engineering and to round out their intellectual development.

The Program of Distribution (General Education) Requirements

English 1A-B..... 8 units
(Speech 10 or 11 may be substituted for English 1B)

Free Electives approx. 20 units

Fine Arts and Humanities
(Areas C and D) 8-12 units

History, Social Sciences, Psychology
(Area E) 8-12 units

A total of 23 units is required from areas C, D and E, with not less than 8 units from areas C and D combined, and not less than 8 units from area E. Not more than two courses should be taken from the same department. Courses satisfying the various areas of the general education requirements are identified by code letters in the course listings in section N.

The above courses may be taken at UCSB or elsewhere. Students should consult their counselors or the College office to determine the acceptability of transfer courses.

CEEB Advanced Placement Credit

Students may fulfill some of the requirements of the College of Engineering through the College Entrance Examination Board (CEEB) Advanced Placement Tests. Credit for these tests is assigned as follows:

College of Engineering Credit for Advanced Placement Examinations

Advanced Placement Examination Completed:	Equivalent Credit will be granted for:
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Chemistry score of 3, 4, or 5	Chemistry 1A-1B
----------------------------------	-----------------

English score of 3	Subject A (see F2) and English 1A
score of 4 or 5	English 1A and 1B

History score of 3, 4, or 5	Two history courses in the General Education History requirement. If the exam is in U.S. History, it also will satisfy the American History and Institutions requirement in F3 .
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Mathematics

Exam AB—

score 3, 4, or 5 Mathematics 3A: enroll in Mathematics 3B.

Exam BC—

score of 3, 4, or 5 Mathematics 3AB: enroll in Mathematics 3C.

L4 Unit requirements and Grade Point Average

A minimum of 180 quarter units, with at least a 2.0 (C) grade point average, is required for graduation with a Bachelor of Science degree. Students must maintain at least a 2.0 average in the major field of study and at least a 2.0 average in all upper division work taken in the major. Only courses taken in the University of California are included in these computations. No credit will be allowed for courses which repeat essentially the same subject matter of previously completed courses.

L5 Minimal progress requirements

A student in the College of Engineering will be placed on academic probation if the total number of units passed at UCSB is less than:

- 36 at the end of the third term of enrollment;
- 72 at the end of the sixth term of enrollment;
- 108 at the end of the ninth term of enrollment;
- 144 at the end of the twelfth term of enrollment.

At least 3/4 of the minimum number of units passed must include courses prescribed for the major. For lower division students who have not declared a major, at least 3/4 of the units passed must include the core courses common to all majors in engineering.

The following courses may be counted toward the unit minimums:

- Courses repeated to raise D or F grades;
- Courses passed by examination;
- Courses graded IP (in progress);
- Courses passed during summer school at UCSB or another accredited school and transferred to UCSB shall be counted as units passed in the preceding quarter of enrollment.

Students must obtain the approval of the Dean of Engineering to deviate from these requirements. Approval will normally be granted only for medical disability, severe personal problems or accident.

Students enrolled in a dual degree program or with an individualized program of study must submit their proposed programs of study to the Dean of Engineering for approval. The individual programs must contain comparable standards of minimal academic progress.

L6 Summary of degree requirements

The following is a list of the academic requirements which must be satisfied to receive a degree from the College of Engineering.

General University Requirements
Subject A

H
H2

American History and Institutions
Academic Residence
Grade Point Average

H3
H5
H6

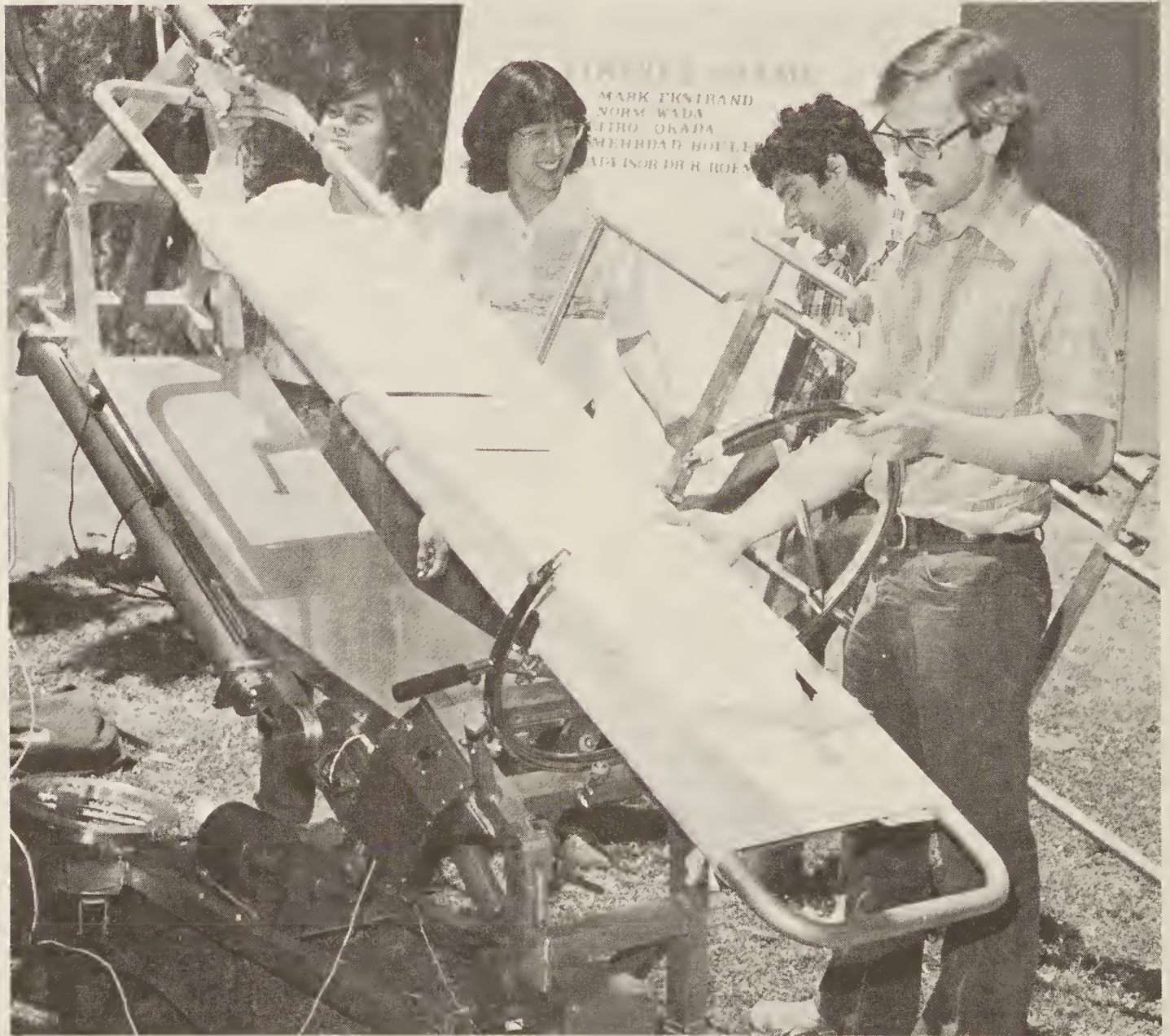
General Education Requirements
Program of Depth
Program of Distribution

L3
L3

Major Requirements

N

Refer to appropriate major in Engineering section



Four senior mechanical engineering students demonstrate a stryker frame which they have modified to permit greater flexibility of use.

College of Letters and Science



John C. Klinkenborg, (r), senior chemistry major and 1979-80 winner of the McRary Memorial Chemistry Prize, discusses protein structure research with J. Thomas C. Gerig, professor of chemistry.

M1 Aims of the College

The College of Letters and Science, with a 1979-80 enrollment of approximately 11,500 students, is the largest undergraduate college on the Santa Barbara campus and the third largest of its kind in the University.

Since the College of Letters and Science is a liberal arts college, its faculty has created a set of requirements for the degree designed to encourage students to acquire a liberal education through the development of both depth and breadth of knowledge. **Depth** is to be developed through completion of a major - a course of study in a single discipline or area which will familiarize the student with the fundamentals of methodology and knowledge in a particular field of learning. **Breadth** is to be developed through the fulfillment of the General Education requirements - a program of study ranging across the academic spectrum in areas outside that of the major. The General Education requirements are divided into five sections: A. English Reading and Composition; B. Science, Mathematics, and Engineering; C. Fine Arts; D. Hu-

manities; and E. History, Social Science, and Psychology. Students are required to complete a specified number of courses from each of these sections, as described in **M4**.

The College offers three bachelor's degrees: the Bachelor of Arts, the Bachelor of Science, and the Bachelor of Music.

Letters and Science Announcement

The College publishes the *Letters and Science Announcement* annually. It contains a description of degree requirements, special options available to students, and general academic information and advice. New students will receive a copy of the *Announcement*, including a special supplement designed for them, when they are admitted to UCSB. Continuing students will receive their copies each May.

Requests for a copy of this publication should be addressed to the College. (See back cover for address.)

M2 Special programs and options

Accelerated Study Access Program - ASAP

The Accelerated Study Access Program in the College of Letters and Science is designed to serve the needs of exceptionally able and motivated high school and junior high school students in the Santa Barbara area. ASAP allows highly qualified young scholars the benefits of simultaneous enrollment in their home schools and in the University of California at Santa Barbara.

ASAP participants are admitted to the University of California in freshman standing and have access to the entire range of academic resources of the campus. They may enroll in any UCSB course for which they are qualified and will receive full University credit for each course completed. Once they have graduated from high school, Program members may continue their education at UCSB or are eligible for transfer to another campus of the University of California or to any other institution of high education for which they are qualified.

Brochures describing the Program, eligibility requirements and application procedures are available from the ASAP Coordinator in the College Office.

Adult Reentry & Part-time Program

In order to accommodate more fully the individual needs of the increasing number of reentry and part-time students, the College of Letters and Science has established an Adult Reentry and Part-time Program. Program participants are a diverse group of individuals. Some are employed full or part time, some are rearing families, some are commuting from varying distances, and some are resuming their education after an extended absence from formal study. Many are older than the so-called "typical" student.

The Program offers prospective students assistance in:

- Reviewing the opportunities available at UCSB;
- Finding an educational direction compatible with their interests, abilities, obligations, and career goals;
- Counseling for special programming and scheduling needs; and,
- Referral to appropriate offices for information on admissions, financial aid, child care, and other services.

Students who wish to attend the University on a part time basis are encouraged to do so. Those who enroll in fewer than 9 units are entitled to a partial fee reduction, as described in **C2**.

Inquiries concerning the Program may be directed to the Program Coordinator in the College Office.

Honors Council

The Honors Council is a group of ten to twelve undergraduates with records of scholastic excellence who are selected by the Dean of the College of Letters and Science to provide a forum for the exchange of information and ideas on academic matters. Council members represent the several primary areas of study and are selected by the Dean from a group of nominees submitted by their department chairs. The Associated Students representative to the Executive Committee also serves on the Council in an ex-officio capacity. Council members are selected once a year, normally in the Spring, and may continue to serve until the time of their graduation.



M3 Majors offered

The College's 35 departments and interdepartmental committees offer majors in over 70 fields ranging from African Area Studies to Speech and Hearing Sciences. They include all of the traditional areas of study as well as a variety of innovative interdisciplinary majors such as Environmental Studies and Liberal Studies. A complete listing of all majors and programs offered is given in **A6**, and the curriculum for each major is described in **N**.

The Letters and Science Program

During their freshman and sophomore years, students who have not yet selected a major will be part of the Letters and Science Program. While in this Program, they are encouraged to sample courses in a variety of departments to help them develop their interest and learn about the wide range of academic opportunities available at UCSB. The freshman and sophomore years are deemed ideal times to explore and to begin focusing upon possible fields of study. The College of

Letters and Science and many individual academic departments offer special advising services to undeclared students to help them make sound academic decisions. All students are expected to have selected a major by the time they have completed 84 quarter units.

Change of major

Students may petition to change their major, preferably not later than the end of the junior year, with the approval of the chairperson of their prospective department and the Dean of the College. They must fulfill any prerequisites for admission to the major and normally should be able to fulfill all degree requirements, including those for the new major, by the time they have attempted 200 units. (See **M5** for a description of the 200 unit enrollment limit.)

Individual major

Highly motivated students with excellent academic records who find that no single major accommodates their intense and specific interest in a given subject may propose their own *individual* major, provided that sufficient courses exist in the College to support such study. The proposals are prepared with the guidance of three faculty members and are thoroughly examined for cogency, completeness, and academic merit by the Dean and the Executive Committee of the College, which has final approval authority.

Minimum qualifications for proposing an individual major include a good grade point average (well above 3.0) and residence in this College for at least three quarters. Final proposals for individual majors must be submitted no later than the end of the junior year. However, students are urged to discuss their ideas with a college adviser well before then to allow sufficient time for the preparation, review, and approval of their proposal. Normally, this process takes at least three months.

The number of individual majors which are approved remains rather small, due in part to the wide variety and flexibility of existing majors and in part to the high standards by which proposals are evaluated. Information sheets describing this option are available in the College Office.

Double majors

Students with interest and talent in two separate major fields have the option of proposing a double major. If, upon recommendation of the department chairpersons involved, the Dean of the College approves the proposal, the student becomes responsible for completing all requirements for each major, normally by the time 200 units have been undertaken. No more than 8 units of courses may be applied simultaneously to the upper division requirements of the two majors.

M4 College requirements

General Education Program

Students in the College of Letters and Science must complete certain General Education (GE) requirements appropriate to their degree, as described in the following section, in order to qualify for graduation. In addition, see **H** for University requirements and **N** for major requirements.

Students admitted during the 1980-81 academic year are responsible for the appropriate requirements as described in this catalog. These requirements may be satisfied with courses completed on this campus or with equivalent courses completed at another accredited collegiate institution, or by means of CEEB Advanced Placement credit (see chart later in this same section).

UCSB courses which are applicable to the GE requirements are identified by special symbols in the descriptions in **N** and in the *Schedule of Classes*. These symbols, A, B-1, B-2, C, D, E-1, and E-2, correspond to the GE area to which they apply.

Regulations Governing Selection of General Education Courses

1. Courses selected for these requirements must be at least **three quarter units each** and must be in the **1-193 number sequence** at UCSB. Variable unit courses, such as Mathematics 3S and French 14, must be completed in **3-unit increments** in order to apply to these requirements. Equivalent transfer courses will apply to these requirements.

2. Courses selected for these requirements must be on the Letters and Science List of Courses. See **M5**.

3. Courses in the **subject of the major** will not apply to the area requirements B, C, D or E if the student's major is departmental rather than interdepartmental. Refer to the chart in **A6** for the classification of each major. Students with double majors and those with interdepartmental or individual majors may use appropriate major classes for the GE requirements.

In all but the following cases, "subject of the major," as it is used here, means **courses offered by the student's major department**. Thus, History majors may not apply courses in the History Department to GE requirements and students in the Communication Studies major or the Speech and Hearing Sciences major may not apply courses taught in the Speech Department to the GE requirements.

In the following majors, the subject of the major refers to all courses which share the label of the major title: Chinese, French, Germanic Languages and Literatures (i.e., German), Greek, Latin, Portuguese, Slavic Languages and Literatures (i.e., Russian), and Spanish. Thus French majors may not apply French courses and Latin majors may not apply Latin courses to GE.



On the other hand, courses required for the major which are taught by departments *other* than the one which sponsors that major *will* apply to appropriate portions of the GE requirement. *Example:* The language and history courses required for the English major will apply because they are not offered by the Department of English, the subject of the English major. Similarly, the chemistry, physics, and mathematics courses required in preparation for the majors offered by the Department of Biological Sciences will apply to appropriate GE areas for these majors because they are not taught by the department offering the majors.

4. Courses which bear a **common departmental designation** can be applied to only one of the four Areas, B, C, D, or E. Thus, even though a few departments offer some courses which are acceptable for one area of GE and others which are acceptable for a completely different area of GE,

students may apply courses in that department to only one of the appropriate GE requirements. *For example,* if they had completed both Anthropology 2 and Anthropology 5 (which are acceptable for areas E1 and B2, respectively), they could apply Anthropology 2 to E1 *or* Anthropology 5 to B2, but they could not do both. Courses with a common departmental title cannot be applied to more than one area of GE.

5. Freshman seminar courses will not apply to any GE requirement.

6. Courses used for the GE requirements may be taken on either the letter or the Passed/Not Passed grading option if so offered. See **G6** for information about these grading options.

7. Courses used for the American history and institutions requirement in **H3** may be applied simultaneously to the GE area requirements B, C, D, and E, subject to the above stipulations.

General Education Program — Bachelor of Arts Degree

(See preceeding page for rules governing the selection of these General Education courses.)

Area A — English Reading and Composition

Required: English 1A—1B (or two equivalent semester or quarter courses of at least 3 semester or 4 quarter units each.)

All students, including transfers, who have fulfilled the Subject A requirement must enter and complete English 1A and 1B in successive quarters or when assigned space. None of these classes may be dropped from the study list once class space has been obtained. Students will be notified of class space assignment in these courses when they receive registration materials from the Registrar.

Area B — Science, Mathematics, and Engineering

Required: Three courses from Area B, including at least two from B—1. (Two equivalent semester courses of three or more semester units each from B—1 will fulfill this requirement entirely.) A laboratory or demonstration section is strongly recommended.

B—1

Astronomy

Biology

Botany

Chemistry (except 20)

Geology

Mathematics (except 1, 1SX, 1SY,
1X, 1Y, 2, 2S, 2X, 10, 100AB)

Natural Science 1ABC

Physics

Probability/Statistics

Zoology

B — 2

Anthropology 5, 105, 121, 150,
151, 152AB

Chemical Engineering 10, 120A,
130AD, 150A, 158A, 160

Chemistry 20

Computer Science

Electrical and Computer

Engineering

1, 5, 15AB, 130ABC, 150

151, 152AB, 154, 158

Engineering 170A

Environmental Studies 12, 13,
15, 105, 109, 110

Ergonomics 10, 42, 50AB, 105,
106, 110, 152, 156, 182

Geography 3, 102, 110, 111,

112, 113, 114, 119, 133,

134, 163, 164, 165, 167, 168

Interdis. Sts. 15A, B

Mechanical Engineering 102,
110, 152AB, 157AB

Nuclear Engineering 10, 111,
121, 122

Psychology 106, 113ABL, 132,
133AB, 137

(Cont'd on next page)

General Education Program — Bachelor of Arts Degree *(cont'd)*

Area C — Fine Arts

Required: Two courses (semester or quarter) from one or more of the following.

Art History <i>(except 160D)</i>	163, 163S, 164	187XY, 188X, 189YZ
Black Studies 114AB, 140, 141, 142	Film Studies 46, 101ABC, 115, 117, 120, 155AB, 128, 130, 135, 140, 143, 145, 146, 151AB, 152, 155A-P, 156, 158, 159, 165, 170, 180, 186, 190, 191, 192AB, 193	Italian 150X, 180XYZ, 181X, 188XY
Chicano Studies 142, 186AB, 188ABC		Music 14, 15, 16, 17, 113-119B
Classics 180ABD		Portuguese 128
Dance 45, 145AB, 150		Scandinavian 140
Dramatic Art 46S, 60, 60S, 61, 102, 103, 105ABC, 106, 117, 148, 155, 160ABCDEF, 162,	French 178XYZ, 184XYZ, 187,	Sociology 151
		Spanish 126, 127

Area D — Humanities

Required: Three courses from one or more of the following. (Two equivalent semester courses of at least three semester units each will fulfill this requirement entirely.) Levels 1, 2, 3 (or equivalent) in foreign language will not apply to this requirement*

* Arabic	* German <i>(except 147, 160D, and 187)</i>	Religious Studies
Black Studies 38, 48, 100, 113, 115, 124, 128, 129, 130AB, 132, 133ABC, 134, 135A-Z	* Greek	* Russian <i>(except 133)</i>
Chicano Studies 12, 120, 121, 180, 181, 190	* Hebrew	* Scandinavian <i>(except 140)</i>
* Chinese	History 192	Semitic Languages
Classics <i>(except 180ABD)</i>	Interdisciplinary Studies 101	* Spanish <i>(except those in C)</i>
Comparative Literature	* Italian <i>(except those in Area C)</i>	* Speech 10, 11, 47, 52, 103, 112, 117, 118, 129, 131, 134, 135, 137, 138, 142, 143, 145, 149AB, 150, 161, 180, 183, 184, 187
English <i>(except 1A-1B)</i>	* Japanese	
* French <i>(except 188 and those in Area C)</i>	* Latin	
	Linguistics	
	Philosophy	
	* Portuguese <i>(except 128)</i>	

Area E — History, Social Science, and Psychology

Required: Three courses from one or more of the following, including at least one from E—1. (Two equivalent semester courses of at least three semester units each will fulfill this requirement entirely if at least one is from E—1.)

E — 1

Anthropology <i>(except those in Area B-2)</i>	117, 132, 140, 141, 144, 145, 148, 150, 152, 153, 154, 155, 159, 161, 162, 181, 182, 183, 190	Psychology <i>(except those in Area B-2)</i>
Chicano Studies 110		Sociology <i>(except 113, 115, 144, 151, 191ABCDE, 192, 193)</i>
Economics <i>(except accounting and 121)</i>	History <i>(except 168ABQ, 192)</i>	
Geography 2, 5, 101, 106, 109,	Political Science <i>(except 174)</i>	

E — 2

African Area Studies 100	168ABQ, 170AB, 174, 189, 191AA-ZZ	History 168ABQ
Asian American Studies 100AB, 110, 146	Environmental Studies 11, 16, 116, 122, 125, 126, 130ABC, 133, 134, 135, 136, 165ABC, 170, 177, 187	Interdisciplinary Studies 120
Black Studies 1ABC, 101, 102, 103, 104, 105, 107, 110, 119, 120, 121, 125, 126, 160ABC	Ergonomics 7, 112, 117AB, 118	Law & Society 100, 190
Chicano Studies 1ABC, 105, 115, 140, 141, 144, 150, 164,	German 147	Political Science 174
		Sociology 144
		Speech 104, 132ABC, 136, 144, 158, 159, 185, 186



Advice for Transfer students

Prospective transfer students should use the appropriate list of required courses and their descriptions in **N** as a guide for selecting equivalent courses at other schools. California community college counselors have information concerning equivalent transferable courses. New transfer students may petition to follow the General Education program in effect at UCSB at the time they were first-term freshmen or in effect three years previous to their first enrollment here, whichever is more recent. Questions concerning the acceptability of transfer courses for these requirements should be directed to the College office.

General Education program-Bachelor of Science degree

Only majors in chemistry, mathematical sciences, mathematics, physics, and physiological psychology lead to the Bachelor of Science degree.

The GE requirements for the Bachelor of Science degree are the same as those given above for the Bachelor of Arts degree, with two exceptions: **1)** B.S. degree students must choose a total of five courses from Area B, at least four of which must come from Area B-1; **2)** B.S. degree students must complete only two of the three Areas C, D, and E.

General Education program-Bachelor of Music degree

The Bachelor of Music degree program is open by audition only to certain specially qualified students. For information concerning admission to and degree requirements for this program, consult the Department of Music. In addition, see **H** for University requirements, and **N** for major requirements.

Advanced Placement Examinations

Students who completed special Advanced Placement courses in high school and who earned scores of 3, 4, or 5 on the CEEB Advanced Placement Examination taken before high school graduation will receive 5-10 units of credit toward graduation at UCSB for each such test completed, provided the scores are reported to the Office of Admissions. The specific unit value assigned to each test and the applicability of this credit to the G.E. requirements is given in the following chart.

Advanced Placement Credit

Advanced Placement Exam with score of 3, 4, or 5	Units Awarded	General Education Credit	UCSB Course Equivalent (You may not enroll in these courses for credit at UCSB)
American History	10	2 crs – E1	
Art History	10	2 crs – C	Art 1
*Art Studio			
<i>General Portfolio</i>	10	none	Art 5A
<i>Drawing Portfolio</i>	10	none	Art 5A
Biology	10	2 crs – B1	Biology 20, 20Z, Natural Science 1C
Chemistry	10	2 crs – B1	Chemistry 25, Natural Science 1B
*English – Comp & Lit			
<i>With score of 3</i>	10	English 1A	English 1A
<i>With score of 4 or 5</i>	10	English 1A-B	English 1A-B
*English – Lang & Comp	10	none	
European History	10	2 crs – E1	
French Language			
<i>With score of 3</i>	10	2 crs – D	French 1-6
<i>With score of 4 or 5</i>	10	2 crs – D	French 1-6, 26
French Literature			
<i>With score of 3</i>	10	2 crs – D	French 1-6
<i>With score of 4 or 5</i>	10	2 crs – D	French 1-6, 26, 101
German Language	10	2 crs – D	German 1-5
German Literature	10	2 crs – D	German 1-5
Latin: Vergil	5	1 crs – D	Latin 1-3, 50
Latin: Catullus-Horace	5	1 crs – D	Latin 1-3, 50
*Mathematics – Calculus AB	5	1 crs – B1	Mathematics 1, 1SX, 1SY, 1Y, 2, 2S, 2X, 3A, 3S (1st 4 units), 7A, 34A, 34S (1st 4 units), or equiv.
*Mathematics – Calculus BC	10	2 crs – B1	Mathematics 1, 1SX, 1SY, 1Y, 2, 2S, 2X, 3AB, 3S (1st 8 units), 7AB, 34AB, 34S (1st 8 units), or equiv.
*Music – Listening & Lit	10	2 crs – C	Music 15, 16
*Music – Theory	10	none	Music 11
*Physics – B	10	2 crs – B1	Physics 10, Natural Science 1A
*Physics – C (Mechanics)	5	1 crs – B1	Physics 1, 6A
*Physics – C (Elect. & Magnetism)	5	1 crs – B1	Physics 3, 6B
Spanish Language	10	2 crs – D	Spanish 1-5
Spanish Literature	10	2 crs – D	Spanish 1-5

***Note:** A maximum of 10 units EACH in Art Studio, English, Mathematics, Music, and Physics is allowed.



M-5 Unit requirements

In order to be eligible for graduation, students must complete at least:

- 180 total units
- 162 units selected from courses on the Letters and Science List
- 60 upper division units selected from courses on the L&S List. See G6 for the limitation on Passed/Not Passed unit credit, and H5 for the units required in residence in the University and in this College.

Letters and Science List of Courses

All courses in the College of Letters and Science (except Military Science and Physical Activities) and all courses in the College of Creative Studies are on the Letters and Science List of Courses. The following courses outside this College and the following specially approved Military Science courses are also on the L&S List:

- Chemical Engineering 10, 110AB, 120ABC, 128, 130ABCD, 140AB, 150AB, 157, 159AB, 160, 180AB, 182, 198
- Computer Science (all courses)
- Education 114, 165
- Electrical and Computer Engineering 1, 5, 15AB, 130ABC, 150, 151, 152AB, 154, 158
- Engineering 3AB, 170A
- Mechanical and Environmental Engineering 102, 110, 152AB, 157AB
- Military Science 1ABC, 3, 4, 5, 7, 8, 9, 10, 104B, 104C
- Nuclear Engineering 10, 111, 121, 122.

Courses in the Graduate School of Education and in the College of Engineering, other than those specially approved above, are not included on the L&S List.

UCSB courses on the L&S List are considered upper division if they are numbered 100-199; all courses in the College of Creative Studies, except General Studies 1, are considered upper division. Courses which do not appear on the L&S List will apply to the 180 total units required for graduation but will not apply to the 60 upper division or the 162 overall Letters and Science unit requirements above.

If a non-Letters and Science course is either required for or accepted into the major, it will be counted as if it were a Letters and Science course at the time of the student's graduation, and thus will apply to the appropriate Letters and Science unit requirements.

Transfer students from community colleges should take particular note of the upper division unit requirement. Similarly, students transferring from other colleges or schools in which they earned credit for a substantial number of courses considered "non-Letters and Science" at UCSB (such as engineering, agriculture, or journalism), should review the 162 and 60 Letters and Science

unit requirements and plan their programs at UCSB accordingly.

Community college credit limit

After completion of 105 or more cumulative quarter (or 70 semester) units in the University and all other colleges combined, no additional unit credit will be accepted for any courses completed subsequently at a community (two-year) college. Thereafter, courses completed at community colleges will apply to specific subject requirements, as appropriate, but not to the above unit requirements.

Physical Activities credit limit

No more than 6.0 units of 1/2 unit Physical Activities courses (or equivalent transfer courses) will be accepted toward the 180 total units required for graduation.

200 unit enrollment limit

Normally, students are expected to complete all their degree requirements by the time they have undertaken 200 total units. If enrollment beyond this limit is necessary or desirable, students may often obtain approval by submitting a Proposed Schedule for Graduation to the Dean of the College, giving their reasons for continued enrollment and outlining their proposed programs.

M-6 Summary of Letters and Science degree requirements

The following chart summarizes the degree requirements for students in the College of Letters and Science. For more information concerning a given requirement, turn to the catalog sections indicated.

Requirements	Catalog Section
General University Requirements	
Subject A	H2
American History and Institutions	H3
Academic Residence	H4
Grade-Point Average	H5
General Education Requirements	M4
Major Requirements	H7 and N
Unit Requirements	M5

M-7 Preprofessional programs

While enrolled in the College of Letters and Science, students can prepare for admission to a variety of professional and graduate programs in the



University of California and other colleges and universities throughout the nation. The College provides preprofessional counseling in a number of fields, to assist in this preparation.

In particular, the College pre-professional adviser can assist those preparing for professional programs in Law, Medicine (and other health-related fields), Education, and Business Administration with questions concerning undergraduate curricular preparation and admission requirements. Further, this adviser works closely with the Health Science adviser in the Department of Biological Sciences by conducting mock interviews to prepare students for the competitive medical school admissions process. The College pre-professional adviser also provides information to students interested in other health science fields, such as dentistry, nursing, and physical therapy.

Students interested in all professional fields are welcome to utilize the resources of the College Office to research admissions information and to discuss with the preprofessional adviser pertinent questions about preparing for such programs.

The College Office houses a microfiche reader and a complete collection of catalogs on microfiche from two-year, four-year, graduate, and professional schools throughout the United States and from major foreign universities. A limited collection of professional school catalogs in the fields of law, education, medicine, and nursing are also available in the College Office.

Further information, including lists of the courses required or recommended for many of these fields, is available in the *Letters and Science Announcement* and from the College Office.

Undergraduate Diversified Program at UCSB

Students who intend to teach in a self-contained classroom in California public schools must obtain a multiple subject teaching credential in accordance with the requirements of the Teacher Preparation and Licensing Act of 1971, known as the **Ryan Act**.

Among other requirements, the Ryan Act specifies that all candidates for the multiple subject credential either must pass the National Teacher Examination or must complete as part of or in addition to their undergraduate academic preparation an approved *diversified program in the liberal arts*. This is designed to provide the necessary background for the subjects commonly taught in the elementary schools.

The Undergraduate Diversified Program at UCSB, however, is not a degree program. It is instead an assortment of courses prescribed for the purpose of the multiple subject credential. With careful planning, students in the College of Letters and Science may complete the Diversified Program while they simultaneously fulfill the requirements for the bachelor's degree and the prerequisites for admission to the Graduate School of Education for professional education courses leading to the multiple subject credential. Students are urged to consult credential advisers as soon as possible to ensure selection of appropriate courses.

Applicants to UCSB's credential program may obtain verification of completion of the Diversified Program from the Graduate School of Education. Students who apply to credential programs elsewhere and who do not apply to UCSB's program may obtain this verification from the credential adviser in the College of Letters and Science.

The Diversified Program at UCSB consists of 126 quarter units in four different areas with 31-36 quarter units in each area, and with no more than a 4 1/2 unit variance in any two areas.

Courses for the major, for General Education, and courses required for admission to the teaching credential program all apply to the Diversified Program. However, courses cannot be applied to more than one area within the Diversified Program.

For the complete details of the Diversified Program, consult the Graduate School of Education or the College Office.

Departmental information and courses of instruction



N1 Presentation of offerings

This section contains general academic information, including departmental entries, descriptions of programs, aims, requirements, faculty listings, and correspondence information. Teaching credential programs and career opportunities, where applicable, are described in most entries.

Because the catalog must be prepared well in advance of the academic year it covers, it may not reflect more recent changes in curricula, requirements, and faculty listings. Because course descriptions are subject to change without notice, students should consult individual departments for the most current information. The quarterly *Schedule of Classes* is the final authority in regard to classes offered and instructors. The current *Schedule* is available in the Campus Bookstore prior to the opening of each new quarter.

Prerequisites for courses should be noted carefully; a course has no prerequisites unless so designated. It is important to note that some courses are not offered every year. Admission to UCSB does not guarantee enrollment in any particular course.

The quarterly *Schedule of Classes* also indicates when and where courses are offered. Students planning their schedules in advance should contact the individual department to determine when a particular course is to be offered. See **G8** for the rights and responsibilities of students and instructors.

N2 Numbering of courses

Lower division

Lower division courses, numbered 1-99, are open to all UCSB students. No lower division course may be taken for upper division or graduate credit.

Upper division

Upper division courses, numbered 100-199, are open to all students who have met the prerequisites as indicated in the course listing (see sample below). No graduate course credit can be allowed for any upper division course even if additional work is completed. However, a limited number of upper division courses may be applied in fulfillment of graduate degree requirements.

Before enrolling in any upper division course, students in the College of Letters and Science should review the *Letters and Science List of Courses* in **M5** to determine whether a course is applicable to the 60 upper division Letters and Science unit requirement.

Independent studies

Independent studies courses, numbered 198/199, offer the nearest approach to graduate study available within the undergraduate curriculum. Students seeking to enroll in 198/199 courses must:

- 1) have attained upper division standing (84 or more units completed);
- 2) have at least a 3.0 grade point average for the preceding three quarters;
- 3) be able to demonstrate evidence of an appropriate academic background (completion of at least two upper division courses in the same field);
- 4) and obtain the necessary approvals as outlined in the *Schedule of Classes*.

Students are limited to five such units per term, 15 units per year and 30 units total in all 198/199 courses combined, subject to departmental restrictions as noted in the *Schedule of Classes* and in the departmental entries in this section.

Graduate courses

Graduate courses numbered 200-299 ordinarily are open only to students who have completed at least 12 upper division units basic to the subject matter of the course. Exceptionally qualified undergraduate students with at least 12.0 units in that subject *and* a cumulative grade point average of 3.00 or above may petition to enroll in graduate courses and should do so prior to pre-enrollment.

Courses numbered 300-399 are designed for a professional sequence in approved credential programs in the Graduate School of Education. Providing theory related to field practice in teaching, they cover teaching strategies, instructional materials, and the psychology of learning.

Courses numbered 400-499 are devoted to the techniques and practices of translation and interpretation from and to a foreign language. Normally these may not be applied to graduate degree requirements.

Courses numbered 500-599 are reserved for advanced study and research and are not open to undergraduates.

N3 Sample course listing

Sample:

Course Number	Course Title	Number of units of credit	Instructor	Code
120A●	Primate Behavior	(4)	Symons	[B2]
Description				
<i>Prerequisite: Anthropology 5.</i>				
Survey of social behavior in non-human primates emphasizing field studies. Course will stress function and evolution of behavior. (F)				

Each listing in the following departmental entries contains the course number, course title, number of units of credit, instructor, prerequisites (if any), and description. See **G6** for an outline of the unit system. A course in which the instructor is listed as "Staff" may be offered by various instructors.

The letter in parentheses which follows the course description (F,W,S or SS) indicates whether the course will be offered in the fall, winter or spring quarter or in the summer session. Course numbers which are suffixed with the letter "L" are laboratory courses (e.g., 114L).

The code which appears in brackets following the instructor's name refers to the specific portion of the General Education requirements which that course fulfills in the College of Letters and Science and the College of Engineering. If no General Education code is given, the course does not fulfill any General Education requirement. Refer to **L3** and **M4** for a complete explanation of the General Education Programs of each college and the rules governing selection of appropriate courses. While all acceptable courses are identified with the appropriate G.E. code, enrollment in any course is subject to completion of the stated course prerequisites.



African Area Studies

Advisory Committee and Faculty

(See appropriate departmental entries for faculty information)

*David W. Brokensha, Ph.D., *Professor of Anthropology.*

*Herbert M. Cole, Ph.D., *Associate Professor of Art.*

*Robert O. Collins, Ph.D., *Professor of History.*

Brian M. Fagan, Ph.D., *Professor of Anthropology.*

Jean-Marie Hombert, Ph.D., *Associate Professor of Linguistics.*

Robert A. Huttenback, Ph.D., *Professor of History and Chancellor.*

*G. Wesley Johnson, Ph.D., *Associate Professor of History.*

Alan P. L. Liu, Ph.D., *Professor of Political Science.*

*Gerard G. Pigeon, Ph.D., *Associate Professor of Black Studies, (Committee Chairperson).*

Cedric Robinson, Ph.D., *Associate Professor, Political Science.*

Garth T. St. Omer, Ph.D., *Professor of Black Studies.*

Charles Wendell, Ph.D., *Associate Professor in Arabic and Religious Studies.*

This Program is administered through the Department of Black Studies.

Concerns of the program

The major in African Area Studies is an interdepartmental major which is designed to enable the student to acquire a broad interdisciplinary background in African cultures. The major is designed to serve the interest of those students who seek a general knowledge of Africa and its peoples beyond the more restricted African offerings of individual departments or to provide those students who wish to pursue graduate study with an interdisciplinary foundation in African Studies as preparation for more specialized professional training.

Bachelor of Arts

Preparation for the major

Required: African Area Studies 100 or Black Studies 1A and 24 units in one or two of the following language sequences—Arabic 1, 2, 3, 4, 5, 6, Black Studies 3ABC, (Yoruba I, II, III) and/or French 1, 2, 3, 4, 5, 6, or 14. With the permission of the Program adviser, twenty-four units of Portuguese or Spanish may be substituted for an African language. Other exceptions to the aforementioned policy on the language requirement will be appraised on an individual basis. The language requirement may be satisfied upon demonstration of competence at the required level.

The Program is to be made out by each student in cooperation with an adviser in the Department of Black Studies

and will be based primarily upon needs and objectives of the individual student.

Upper Division major

Required: Thirty-six units of upper division courses selected from the following:

Anthropology

148AB • Urbanization in Developing Countries

149 • Social Change in Modern Africa

151 • Fossil Evidence for Human Evolution

165 • African Prehistory

172 • Colonialism: Social Effects

Arabic

110 • Introduction to Arabic Literature

Art History

151F • African Art Part I. The Western Sudan and West Africa East to Nigeria

151G • African Art Part II. Nigeria, East into the Cameroons and South to the Congo

151H • The Art of Festivals

165B • Islamic Architecture

Black Studies

105 • An Introduction to African Nationalism

107 • Ecological Perspectives of African Development

113 • African Mythology and Religion

114A • History of Jazz

114B • Ethnography of the Blues

115 • African Philosophy

130A • French African Literature and Literary Figures

130B • French African Literature After the Independence

133A • Introduction to West Indian Literature

133B • Introduction to West Indian Literature

133C • Introduction to West Indian Literature

134 • Seminar on Aime Cesaire

140 • Ethnomusicology

141 • History of Soul Music

160A • Analysis of the Racist Experience

160B • White Racism and the African Continent

160C • The African Liberation Movement

205 • Methodology of Black Culture (Open only to qualified students)

*Member of African Area Studies Committee

English

190 • Ethnic Literature

Geography

152 • Africa: South of the Sahara

History

- 143 • The Nile Quest
- 144 • Imperialism and Resistance in Africa
- 147 • Modern African History
- 147Q • Special Studies in Africa: Modern African Intellectual History
- 149A—B • West African History
- 169A—B • History of Afro-America
- 169M • Afro-American Thought
- 169Q • Afro-American Topics

Political Science

- 146 • The Political Systems of Tropical Africa
- 147 • The Politics of Developing Areas

African Area Studies

Upper Division course

100 • Africa: An Introductory Survey (4)
[E2]
Introduction to African Studies, emphasis on tropical Africa: sections on physical environment, history, economy, values, literature, religion and arts of selected African societies.

Religious Studies

- 140A • Islam: Origins and Sunnite Orthodoxy
- 140B • Islam: Sectarianism and Mysticism
- 140C • Islam: Popular Religion and Modern Developments

Portuguese

199 • Independent Studies in Portuguese (See M-2 for independent studies 198/ 199 unit limitations)

Teaching credentials

Students who complete a major in African Area Studies may be eligible to pursue a California teaching credential. Consult with the department credential adviser in African Area Studies for specific departmental requirements. Details of State and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180, Phelps Hall.

Correspondence Information

Department of Black Studies, South Hall, Rm. 3631, University of California, Santa Barbara, California 93106. Phone: (805) 961-3800, 961-3847.

Anthropology

Professors

- ¹, ³Paul Bohannon, D.Phil., *Oxford University; social anthropology, modern American studies, psychoanalysis.*
- David W. Brokensha, D.Phil., *Oxford University; modernization, ecology, plural societies; emphasis on Africa.*
- Donald E. Brown, Ph.D., *Cornell University; sociocultural anthropology, political anthropology, anthropology of history; Southeast Asia.*
- ¹Charles J. Erasmus, Ph.D., *UC Berkeley; development; explanation; collective good; Latin America.*
- Brian M. Fagan, Ph.D., *Cambridge University; Old World archaeology, African prehistory, multi-media teaching; Africa.*
- Thomas G. Harding, Ph.D., *University of Michigan; economic anthropology; the Pacific.*
- ³Elvin Hatch, Ph.D., *UC Los Angeles; history of anthropology, social history of rural America, leadership and factionalism in small communities, (Chairman).*
- ¹William Madsen, Ph.D., *UC Berkeley; primitive religion, psychological anthropology; Mexico; addiction.*
- ⁴Elman R. Service, Ph.D., *Columbia University; ethnology and anthropological theory; Latin America.*
- Albert C. Spaulding, Ph.D., *Columbia University; archaeology, cultural ecology, methods and theories of anthropology; North America.*

Associate Professors

- ¹, ², ³Manuel L. Carlos, Ph.D., *UC Santa Barbara; political anthropology; Latin America.*
- Michael A. Glassow, Ph.D., *UC Los Angeles; archaeology, cultural ecology, cultural evolution, primitive technology, method and theory in archaeology; North America.*
- ³Mattison Mines, Ph.D., *Cornell University; social anthropology, kinship, stratification, caste; South Asia*
- Donald Symons, Ph.D., *UC Berkeley; physical anthropology, primate social behavior, the evolution of human behavior.*
- ², ³Barbara Voorhies, Ph.D., *Yale University; archaeology, cultural ecology; Mesoamerica.*
- Phillip L. Walker, Ph.D., *University of Chicago; physical anthropology, osteology; primatology, human evolution.*

Assistant Professor

- Michael Jochim, Ph.D., *University of Michigan; archaeology, hunters and gatherers, European prehistory, archaeological method and theory.*

¹Absent on Leave Fall 1980

²Absent on Leave Winter 1981

³Absent on Leave Spring 1981

⁴Sabbatical in Residence Winter 1981

Concerns of the department

Anthropology is the study of humans in the broadest sense. It concerns itself with the biological, sociocultural, and historical aspects of humankind. The aim of the anthropology major is threefold: (1) to prepare for graduate school those students desiring to work professionally in anthropology, (2) to prepare students for careers either in secondary education or in social work not requiring graduate study and (3) to provide a background in behavioral studies for students desiring a broad education in either the biological or the social sciences.

Two undergraduate majors are offered in the department: Cultural Anthropology (which includes archaeology) and Physical Anthropology.

Department Advising and Publications

The department Undergraduate Secretary is available for counseling in North Hall 2045, 961-2257, 8-12 a.m. and 1-5 p.m. Any questions about courses, requirements, substitutions, and petitions should be channeled there. The department also has advisors in cultural and social anthropology, physical anthropology, archaeology, and the Education Abroad program. The Undergraduate Secretary can direct students to these advisors.

Graduate students in need of counseling should contact the Graduate Secretary in North Hall 2045, 961-3331, 8-12 a.m. and 1-5 p.m.

Information concerning the department, its courses, the faculty, their interests, and related fields courses is available for undergraduates in the department office. Information on career planning is also available. A pamphlet entitled *Anthropology and Jobs*, published for undergraduates by the American Anthropological Association, is available on a loan basis. Brochures regarding the M.A. and Ph.D. programs in Anthropology are published annually.

Bachelor of Arts/Cultural Anthropology

Preparation for the major

Required: Anthropology 2 (or 101), 3, 5.

Upper Division major

Required: Thirty-six units of upper division anthropology (except 101) 12 of which may be in related courses in other departments or subject fields. See department regarding acceptable courses and limitations for double majors.

Bachelor of Arts/Physical Anthropology

Preparation for the major

Required: Anthropology 2 (or 101), 3, 5; 105; Zoology 25 and 25L. Recommended: Zoology 40-40L and Biology 11A-B-C.

Upper Division major

Required: Thirty-six units of upper division anthropology (except 101) at least 12 of which are in physical anthropology (except 105). Twelve units of related upper division courses in Biological Sciences are permitted for credit in the Physical Anthropology major. See department regarding acceptable courses and for limitations for double majors.

Graduate admission

In addition to fulfilling the general requirements for admission to graduate status, the department requires an undergraduate major in anthropology or its equivalent. The department offers both the M.A. and Ph.D. degrees. Neither admission to nor satisfactory completion of the M.A. program automatically provides admission to the Ph.D. program. Applications will be accepted only for admission in the Fall of each year. The deadline for applications is February 1.

Graduate Program Emphases

There are two emphases in our M.A. and Ph.D. graduate training programs: archaeology and ethnology. Additional specializations are possible within each field. Experience as a Teaching Assistant in Anthropology is required before the M.A. or Ph.D. can be granted. Some of the course work may be taken in other departments with the approval of the Graduate Committee.

Master of Arts—Anthropology

During the first year all students take seminars and engage in general advanced study. This stage ends, for ethnology students, with a comprehensive qualifying examination in the spring, which the student must pass to be admitted to the second stage. During this stage archaeology students prepare a M.A. program contract. During the second year, ethnology students prepare a M.A. program contract, select a faculty advising committee, engage in further seminar work and specialized study with appropriate faculty members, and write a major field assessment research paper. Archaeology students prepare two major research papers.

Doctor of Philosophy—Anthropology

1. The graduate program consists of three stages: (1) During the first year all students take seminars and engage in general advanced study. This stage ends, for ethnology students, with a comprehensive qualifying examination in the spring, which the student must pass to be admitted to the second stage. During this stage archaeology students

prepare a Ph.D. program contract. (2) During the second year, ethnology students prepare a Ph.D. program contract, select a faculty advising committee, engage in further seminar work and specialized study with appropriate faculty members, and write a major field assessment research paper. Archaeology students prepare two major research papers. (3) During the third and subsequent years (most likely, two) students write a Ph.D. thesis research proposal and embark on an independent research project that culminates in a doctoral dissertation.

2. The student must demonstrate the methodological competencies required by research specialty, such as a foreign language, linguistics, statistics, historiography, laboratory techniques, etc.

3. Field work of at least three quarters' duration is required before the Ph.D. can be granted. The dissertation normally is based on field research, but this is not a requirement.

4. The complete and authoritative degree regulations are available on request from the Department of Anthropology.

Career opportunities

Most undergraduates in anthropology at UCSB select this department because of the opportunity it affords to acquire a sound liberal education, even though they do not intend to become anthropologists. However, the professionally oriented student will find the curriculum fully suitable.

Normally, the minimum professional requirement to become an anthropologist is the Ph.D., and until recently virtually all who held this degree were teachers and researchers in universities and museums. Some opportunities are available in private research organizations and government agencies. For archaeologists with M.A. and Ph.D. degrees, there are currently career opportunities in cultural resource management, both in the private and public sectors. Graduates with the B.A. in anthropology are likely to pursue careers in teaching, government service, law or business. Further information on career opportunities is available at the Anthropology office.

Teaching Credentials

A bachelor's degree in Anthropology is an acceptable major for entry into a Single Subject (secondary) or Multiple Subject (elementary) Credential Program.

Students completing this degree, who plan to teach at the secondary level in California, should apply to the Single Subject Credential Program in the area of Social Science. The State of California requires that credential candidates demonstrate their subject matter competency in this teaching area. Subject matter competency can be established in one of two ways: either by passing the National Teachers Examination in this teaching area or by completing a State approved program. (The approved program consists of selected course work included in the degree program.) Students should consult with department advisors, or advisors in the Graduate School of Education about courses which, when completed, eliminate the need for taking the National Teachers Examination. Students who wish to pur-

sue a Multiple Subject (elementary) Teaching Credential are advised that the State of California requires that students complete either a Liberal Studies program (see details in section J of the catalogue), or pass the National Teachers Examination (Common Examination). It is quite feasible for students to complete a degree major and to simultaneously fulfill the requirements for the Liberal Studies program. Admission to credential programs at UCSB also requires certain prerequisites. The following chart identifies these requirements.

	English 106	Ergonomics 109	Mathematics 100 A & B	Pre-Professional Experience
Multiple Subject Program	X	X	X	X
Single Subject Program	X	X		X

Correspondence information

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Anthropology Lower Division courses

Freshman Seminars To be offered on an irregular basis. For information see department.

2 • Introductory Cultural Anthropology (4) Madsen [E1]
Not open to students who have had Anthropology 101.

The nature of culture: survey of the range of cultural phenomena, including material culture, social organization, religion, and other topics.

3 • Introductory Archaeology (4) Fagan [E1]
An introduction to archaeology and the prehistory of humankind from the earliest times up to the advent of literate civilization and cities; also processes of cultural change. Partly self-paced learning.

5 • Introductory Physical Anthropology (4) Symons [B2]
Human evolution: evolutionary thought, origin and antiquity of the primates, fossil man, and living races.

Upper Division courses

100 • Basic Archaeological Concepts (4) Staff [E1]
Prerequisite: Anthropology 3.

A survey of important archaeological methods of excavation, analysis, and interpretation. Focus will be on the problems and promise of various approaches to the explanation of past human behavior.

101 • General Anthropology (4) Staff [E1]
Not open to students who have had Anthropology 2.
Major principles and concepts of anthropology; may serve as prerequisite for Upper Division courses.

102 • Peoples and Cultures of the World (4) Harding [E1]
A survey of representative primitive and archaic cultures of the world in evolutionary perspective.

103 • Peoples and Cultures of Asia (4) Brown [E1]
Introductory survey of the past and present so-

cial organization and cultures of South, Central, Southeast, and East Asia

104 • Ethnology of the Common Good (4) Erasmus [E1]
Comparative analysis of primitive "communism," First and Third World development, 19th Century and Israeli communes, Russian and Chinese collectivism, and worker management. How the natural dialectic between private and public good becomes the engine of moral evolution.

105 • Human Variation (4) Walker [B2]
Prerequisite: Anthropology 5, Biology 20, or equivalent.

An examination of traditional race concepts contrasted with an approach to human variation through the analysis of biologically adaptive traits.

106 • History of Anthropological Theory (4) Hatch [E1]
A historical account of the thought of various anthropologists whose works have been keystones of anthropological theory since late 19th century.

107 • Psychological Anthropology (4) Staff [E1]
Human socialization, sexual behavior, aggression, mental illness, national character, and social pathology in cross-cultural perspective.

108 • Traditional Political Systems (4) Brown [E1]
Historical survey of anthropological and earlier contributions to the cross-cultural study of government.

109 • Peasant Society (4) Erasmus [E1]
Peasantries in cross-cultural perspective; the nature of peasant society in the modern world and its response to the universal challenges of environment, tenancy, land fractionalization, and economic exploitation.

110 • Technology and Culture (4) Harding [E1]
The role of tools and technical knowledge in the evolution of societies. The development and spread of major technological innovations from the Palaeolithic to the Industrial Revolution. The impact of industrial technology on primitive and archaic cultures.

111X • Culture Change: Explanation and Control (4) Erasmus [E1]

Evolutionary, historical, functional, ecological, psychological, behavioral, developmental, symbolic, and applied approaches to the study and explanation of culture change discussed from a historical perspective that views anthropology itself as a changing subculture.

112X • Ethnology of Inequality (4) Erasmus [E1]
Inequality in primitive, peasant and developing societies and the rise of egalitarianism.

113 • Comparative Society (4) Service [E1]
Prerequisite: Anthropology 2 or consent of instructor.

Comparative study of the structure, development, and function of human society.

114 • Social Organization (4) Mines [E1]
Emphasis on various theories of social structure and social organization in cross-cultural perspective; kinship, social stratification, and ethnicity.

115 • Law and Warfare in Non-Western Societies (4) Mines [E1]
The nature of law and warfare in non-Western societies. Analysis of the strategy and tactics of conflict resolution in relation to ecological, economic, and political aspects of life in non-Western societies.

116 • Magic, Religion, and Witchcraft (4) Madsen [E1]
Cultural parallels and variation in supernatural beliefs and practices. The origin and development of supernaturalism from primeval man through contemporary societies. The techniques of supernatural control and relativity of "reality." Today's search for sanction and meaning.

119 • Evolution of Modern Culture (4) Service [E1]
The development of modern corporate nation-states in anthropological perspective.

121 • Human Evolution (4) Walker [B2]
Prerequisite: Anthropology 5.
The nature and results of the evolutionary processes responsible for the formation and differentiation of human populations.

122 • The Anthropology of Tourism (4) Brown [E1]
Examines world tourism with emphasis on (1) tourism as a strategy for economic development,

(2) tourism focussed on exotic cultures, and (3) the socio-cultural impact of tourism on the host society.

123 • Anthropology of History (4) Brown [E1]

Introduction to ethnohistory (anthropologists' attempts to discover a people's past) and folk history (a people's own view of their past), with special emphasis on cross-cultural comparison of the conditions which determine the content and form of folk history.

124A • Human Exploitation of Plants and Animals (4) Brokensha and Walker [E1]

The purpose of this course is to explore the relationship which exists between humans, plants, and animals. Special emphasis will be placed on describing the way in which cultural factors influence human exploitation of plants and animals. Offers a general introduction and overview.

124B • Human Exploitation of Plants and Animals (4) Brokensha and Walker [E1]

Prerequisite: Consent of instructor

The purpose of this course is to explore the relationship which exists between humans, plants, and animals. Special emphasis will be placed on describing the way in which cultural factors influence human exploitation of plants and animals. Intended as a seminar for more specialized study of main themes.

125 • The Female of the Species (4) Voorhies [E1]

Prerequisites: Anthropology 2 (101).

A cross section of women's social roles from a pan-human perspective. Investigations into the reasons behind the rich diversity of these roles.

127 • Hunters and Gatherers (4) Jochim [E1]

Prerequisite: Anthropology 2 or 3.

What do Pygmies, Aborigines, and Eskimos have in common? These questions and others will be examined through case studies and cross-cultural comparisons.

128 • Origins of Civilization in the Near East (4) Jochim [E1]

Mesopotamia saw the rise of the world's first cities and states. The origins of these revolutionary social changes will be explored with archaeological data in light theories of cultural evolution.

130 • Prehistory of South America (4) Staff [E1]

Prerequisites: Anthropology 3 and 100.

The prehistory of South America from first occupation to Spanish conquest. Emphasis will be on impact of environmental factors on culture change and the rise of civilization in Peru.

130M • Eastern European Prehistory (4) Staff [E1]

Prerequisites: Anthropology 3 or equivalent.

Traces the cultural development of Eastern Europe from the Paleolithic to the Iron Age. Emphasis on diffusion vs. independent invention, interaction of sedentary and nomadic populations, and the history of archaeology.

130N • Peruvian Prehistory (4) Staff [E1]

Prerequisites: Anthropology 3 and 100.

Traces the cultural development in prehistoric

Peru from the earliest human occupations to the Spanish conquest. Includes other areas of the central Andes during the Huari and Inca empires. Emphasis on those aspects which are unique in Peru.

131 • North American Indians (4) Glassow [E1]

The origins, development, and attainments of New World aboriginal cultures north of Mexico. Some emphasis is given to California groups such as the Chumash.

133 • Cultural Development in Mesoamerica (4) Voorhies [E1]

Prerequisite: Anthropology 3 and 100.

The rise and fall of various ancient civilizations such as those of the Maya, Aztecs, Toltecs, Teotihuacanos and Olmec as well as their cultural antecedents. This course uses self-paced audio-visual modules as well as traditional lecture format.

134 • Modern Cultures of Latin America (4) Carlos [E1]

Continuities and changes in the contemporary cultures of peasant and urban societies in Mexico, Central and South America. Examination of cultural institutions and values, social stratification, village and urban life, elites, urbanization.

135 • Modern Mexican Culture (4) Carlos [E1]

The impact of dependency, industrialization, urbanization, technology, and modern communications on Mexican society in the 20th Century. Examination of recent socio-cultural contemporary urban and rural communities, class structure, value orientations, ethnic minorities, and national integration.

136 • Peoples and Cultures of the Pacific (4) Harding [E1]

The aboriginal and modern cultures of Polynesia, Melanesia, and Micronesia.

137 • The Ancient Maya (4) Voorhies [E1]

The splendiferous Maya civilization as it waxed and waned during ancient times. This course uses self-paced audio-visual modules as well as the traditional lecture format.

139 • Applied Anthropology (4) Carlos [E1]

Examine the development, changing goals, and techniques of applied anthropology in the U.S. and Third World. Emphasis given to the role of anthropology in designing and implementing social change and development programs, services delivery programs, and program evaluation procedures.

140 • Peoples & Cultures of the Middle East (4) Staff [E1]

Study of contemporary Turkey, Iran, Syria, Lebanon, Iraq, Jordan, Saudi Arabia, and Egypt. Emphasis will be on local problems in development. Major source material and topics will center on, but will not be strictly confined to, the anthropological literature.

141 • Origins of Civilization (4) Service [E1]

Examines the six primary civilizations: Mesoamerica, Peru, Mesopotamia, Egypt, Indus Valley, China. The "nature" of civilization is ana-

lyzed with special attention to the institutionalization of permanent centralized power, origins of law, the bureaucratic specializations in centralized economy, state-church, and hereditary social stratification.

142 • Peoples and Cultures of India (4) Mines [E1]

Rise of Indian civilization from prehistoric times to the present; regional divisions of India; family, kin, caste groups, and village life; social organization above village level; effects of urbanization, British rule, and independence.

144 • Peoples and Cultures of Southeast Asia (4) Brown [E1]

Drawing materials from Burma, Thailand, Laos, Cambodia, Vietnam, Malaysia, Singapore, Brunei, Indonesia, and the Philippines, this course is organized around the concept of the corporation as a tool for the comparative analysis of society.

145 • Far Eastern Societies (4) Staff [E1]

The kinship, economic, political, and religious aspects of social organization in the recent traditional and modern societies of China, Japan, Korea, and Tibet.

146 • China in Transition (4) Staff [E1]

The role of kinship, law, education, and religion in the traditional social order, and changes wrought by the Revolution, particularly with respect to age, class, and sex stratification.

147 • Cultural Relativism (4) Hatch [E1]

Cultural relativism is the thesis that cultures are radically different and cannot be judged as inferior or superior to one another. This course asks how cultural relativism arose historically, and what role if any it should play in the modern world.

148A • Plural Societies (4) Brokensha and Bohannon [E1]

An examination of economic, social, and political aspects of selected plural societies; emphasis on developing countries.

148B • Urbanization in Developing Countries (4) Mines [E1]

Growth of cities, patterns of migration, social effects of urbanization on rural and urban areas; comparative aspects.

149 • Social Change in Modern Africa (4) Brokensha [E1]

The social, economic, political, and religious institutions in selected societies from English-speaking tropical Africa.

150 • Advanced Physical Anthropology (4) Staff [B2]

Prerequisite: Consent of instructor.

An evaluation of areas of human genetics, population genetics, serology, dermatoglyphics, and anthropometry that pertain to current physical anthropology.

151 • Fossil Evidence for Human Evolution (4) Walker [B2]

Prerequisites: Anthropology 3, 5, 101. Geology 3 and Zoology 25 recommended.

Presentation and discussion of the fossil evidence for human evolution. Various interpretations will be discussed in light of evolutionary theory and intellectual climate prevalent at the time of formulation.

152A—B • Osteology (4-4) Walker [B2]

Prerequisites: Anthropology 3, 5, and consent of instructor.

The biology of bones and teeth: application to study of osteological remains from archaeological sites; morphology, paleopathology, statistical methods. Students are given practical experience in analysis. Course designed for students who intend graduate work in physical anthropology or archaeology.

153 • Seminar on Primate and Human Sexual Behavior (4) Brown and Symons [E1]

Prerequisite: Consent of the instructor.

A critical examination of the nature and determinants of human sexual behavior as evidenced in nonhuman primate behavior as well as a cross-cultural view of human societies. Broadly biological, evolutionary, and cultural approaches will receive equal emphases.

154 • Special Topics in Social Anthropology (4) Brown [E1]

A critical review of selected theoretical and methodological contributions of social anthropology to the description, analysis, and comparison of human societies. Designed for students who intend graduate work in social sciences. Seminar.

157 • Cross-Cultural Aspects of Human Development (4) Bohannon [E1]

Human growth experience, from conception to death, as influenced by several varieties of cultural context.

157S • Euro-American Ethnic Groups (4) Bohannon [E1]

The historical European cultures of selected U.S. ethnic groups; the processes of turning foreign nationals into American ethnics, their adaptations and contributions to contemporary American culture.

158 • Kinship and the Family (4) Bohannon [E1]

Structural principles of family types and non-familial kinship groups, with emphasis on cultural variety and the pressures on such groups brought by social context.

159 • Urban Anthropology (4) Bohannon [E1]

Cultural and psychic adaptation to urban agglomeration from the earliest cities, with emphasis on Asian, African, European, and Modern American cities, to the present-day megalopolis.

160 • Cultural Ecology (4) Jochim [E1]

Prerequisite: Anthropology 2 or 3.

Ranging from moose hunters to rice farmers, cultures seem tremendously diverse, yet cultural forms do show clear patterns. The relationships of these patterns to the natural and social environment will be examined.

161 • Development of Urbanism (4) Staff [E1]

Prerequisites: Anthropology 3 and 100.

Comparative course on urbanism from an archaeological perspective. The first part of course will deal with differences between village and urban society and will include theories and defini-

tions of urbanism. Second part of course will deal with specific case studies.

163A • Archaeology of North America (4) Spaulding [E1]

A survey of North American archaeology east of the Rocky Mountains and including the Arctic and Alaska, with an emphasis on regional developments as they relate to each other and demonstrate continuity of cultural traditions over long time periods.

163B • Archaeology of North America (4) Glassow [E1]

A survey of North American archaeology west of the Great Plains including northern Mexico and Baja California, with an emphasis on regional developments as they relate to each other and demonstrate continuity of cultural traditions over long time periods.

164 • Old World Archaeology (4) Fagan [E1]

Prerequisite: Anthropology 3 and 100.

A survey of a single aspect of prehistory in the Old World. Normally the course will cover European and Near Eastern Stone Age archaeology.

165 • African Prehistory (4) Fagan [E1]

Prerequisite: Anthropology 3 and 100.

The prehistoric archaeology of Africa from the earliest times up to A.D. 1500. The emphasis of the course will be on the Iron Age archaeology of sub-Saharan Africa.

167 • European Stone Age (4) Jochim [E1]

Prerequisite: Anthropology 3.

The first Europeans included fishermen on the Riviera and elephant hunters in Germany. The archaeological record of cultural adjustments to changing environments will be examined from the earliest occupation through development of agriculture.

169 • Archaeology and Tourism (4) Fagan [E1]

An examination of the impact of tourism on monuments conservation. The course covers history of archaeological tourism, major sites affected, and evolving attitudes to such sites as national and international assets. Students will study specific areas as course project.

170 • Origins of Trade (4) Staff [E1]

Prerequisites: Anthropology 3 and 100.

The course is an examination of prehistoric exchange systems, focusing on trade organized by the state or professional merchants. Societies to be discussed are those in Mexico, Peru, Mesopotamia, and the Indus Valley.

171 • Economics of Primitive and Peasant Societies (4) Harding, Mines [E1]

Economic life of pre-market societies and the social consequences of their involvement in a money economy.

172 • Colonialism: Social Effects (4) Brokensha [E1]

Prerequisite: Consent of instructor.

Study of historical and social processes of colonialism in selected societies: influence on traditional institutions in Africa, Pacific, Asia; legacies in contemporary independent nations.

174 • The Small Town in America (4) Hatch [E1]

Seminar on the country town in America. Emphasis on historical patterns of change and regional variations in social, economic, and political organization.

175A—B • Seminar in History of Ethnology (4-4) Hatch [E1]

Prerequisite: Anthropology 2, 106, or consent of instructor.

A study of the history of anthropological theories and schools of thought, emphasizing such early writers as Durkheim, Malinowski, and Boas.

176 • Seminar in Contemporary Ethnology (4) Staff [E1]

Discussion seminar based on intensive, critical reading of important anthropological works. Intended as preparation for graduate work; enrollment restricted to majors with a 3.5 GPA minimum.

177 • Seminar on Explanation (4) Erasmus [E1]

Seminar discussions of articles on religion, peasantry, functionalism, and culture change. Students trained to analyze research objectives and explanatory procedures of anthropologists and to write forceful, brief critiques.

178 • Seminar on Utopian Societies (4) Erasmus [E1]

Prerequisite: Anthropology 104.

Critical examination of futurist and utopian social schemes in the light of cultural evolution and of past and present communal and collective experiments.

179 • Seminar on the Anthropology of Symbolism (4) Mines [E1]

Prerequisite: Consent of instructor.

A cross-cultural inquiry into the nature and role of symbolism in human society. Discussions on nonverbal communication, myth, ethos, world view, national symbols, political ideology, and the ideology of social structure as symbolic systems.

181 • Methods and Techniques of Field Archaeology (4) Glassow [E1]

Prerequisite: Anthropology 3 and 100.

Introduction to archaeological research design and field techniques of data collection; including lectures and demonstrations, excavation and laboratory work on Saturdays.

182 • Methods of Archaeological Analysis (4) Spaulding [E1]

Prerequisite: Anthropology 3 and 100.

The analysis, description, and comparison of archaeological assemblages: a discussion with examples of analytical methods required for attribute recognition, artifact typology, site seriation, and assemblage taxonomy.

183 • Field Training in Archaeology (6) Staff [E1]

Prerequisite: Anthropology 2, 3, and 100, plus Upper Division standing and consent of instructor.

Introduction to the planning and implementation of full-scale archaeological projects, with a strong emphasis on the formulation of hypotheses and the collection of data relevant to testing them. Instruction in various forms of data collection, including site reconnaissances, mapping,

excavation of structural features, use of aerial photographs and probabilistic sampling designs

184 • Seminar on North American Archaeology (4) Spaulding [E1]

Prerequisite: Anthropology 3 and 100.

Seminar in selected topics in North American prehistory.

190 • Seminar on Political Anthropology of Latin America (4) Carlos [E1]

Examines the role of the state in society, authoritarianism, revolution, and socio-cultural basis and historical background of politico-cultural traditions and institutions which characterize Latin American societies and communities.

191 • Laboratory Techniques in Archaeology (4) Glassow [E1]

Prerequisites: Anthropology 3 and 100

Introduction to the observation and measurement of artifact attributes and procedures for preparation and analysis of archaeological collections.

192 • Corporations and Society (4) Brown [E1]

Examines the anthropological concept of corporateness, and the part this concept plays in the cross-cultural study of law, government, values, social structure, and social change.

193 • Problems in Mesoamerican Prehistory (4) Voorhies [E1]

Prerequisite: Anthropology 133 and consent of instructor.

Seminar in selected problems in archaeology of Mesoamerica.

194 • Field Training in Mesoamerican Archaeology (1-8) Staff

Prerequisites: Anthropology 3, 100, and 133; consent of instructor.

Introduction to design of research projects and techniques of data collection of Mesoamerican archaeology. The number of units taken in one course will depend upon the amount of training and experience received.

197 • Special Courses (1-4) Staff

Prerequisite: Qualified Upper Division students.

Intensive studies or projects focused on special problems related to anthropology which are not covered by other courses. Consent of the instructor and the department chairman are required.

198 • Senior Honors Readings (1-5) Staff

Intended for students who know their own reading needs. May be repeated to a maximum of 15 units from a different staff member each time. Only students with a 3.5 grade average in anthropology (or special permission) may enroll. Normally requires regular meetings with the instructor.

***199 • Independent Studies in Anthropology** (1-5) Staff

May be taken twice (from different staff members). Students must execute a limited research project on their own initiative. Not open to students seeking assigned research topics or to students with less than a 3.5 grade average in anthropology.

*See also N-2 for 198/ 199 independent studies unit limitations.

Graduate courses

200 • Summer Field School in Archaeology (8) Staff

Introduction to the planning and implementation of full-scale archaeological projects. The opportunity will be given to formulate and carry out research designs and to direct crews in data collection.

201 • Archaeological Theory and Concepts (4) Jochim

Examination of the theoretical framework for the explanation of prehistoric behavior.

206 • Current Problems in Archaeology (4) Staff

Critical examination of a selected aspect of contemporary archaeological research and theory. Topics will vary from year to year. Course may be repeated for credit.

207 • Ecological Perspectives in Archaeology (4) Staff

Prerequisite: Anthropology 160.

Investigation into cultural ecological theory and its application to archaeological problems of explanation.

208 • Methods and Techniques of Archaeology (4) Spaulding

The description, analysis, and interpretation of archaeological data.

209 • Problems in Mesoamerican Archaeology (4) Voorhies

A problem-oriented approach to the major issues of Mesoamerican prehistory.

210 • African Prehistory (4) Fagan

Prerequisite: Anthropology 3.

The prehistoric archaeology of Africa from the earliest times up to A.D. 1500. The emphasis of the course will be on the later Iron Age archaeology of sub-Saharan Africa.

212 • Advanced Laboratory Techniques in Archaeology (4) Glassow

Prerequisites: Anthropology 191 or equivalent

Consideration for techniques for observation and measurement of artifact attributes, procedures for preparation and analysis of archaeological collections, organizations of archaeological laboratory operations, preparation of artifact descriptions.

213 • Advanced Methods and Techniques of Field Archaeology (4) Glassow

Prerequisites: Anthropology 181 or equivalent, consent of instructor.

Training in the development and execution of archaeological field research designs and the management of field projects. Consent of instructor must be obtained at least one quarter in advance of the class.

220 • Prehistory and Ethnography of Western North America (4) Staff

Prerequisites: Consent of instructor and Anthropology 163B.

Seminar. Investigation of selected problems of

prehistoric and historic developments in North America west of the Rocky Mountains

229A—B • Major issues in the History of Cultural Anthropology (4-4) Service

Prerequisite for 229B: 229A

A history of cultural anthropology as revealed in the writings on major theoretical problems beginning in the 1850's, the disputes, the solutions, and a final appraisal of where we stand today.

232 • Current Problems in Ethnology (4) Staff

235 • Political Anthropology (4) Carlos

A critical examination of the main themes and theories of political anthropology.

237 • Anthropology of Development (4) Brokensha

An examination of the role of anthropology in the process of development. Theoretical and practical aspects of studies of urbanization, modernization, agriculture, health, education, labor, with emphasis on Africa.

238 • Economic Anthropology (4) Harding, Mines

A critical examination of the main themes and theories of economic anthropology.

239 • Professionalism in the Social Sciences (4) Bohannon

The social structure of anthropology as a profession; the literary forms to be mastered, dealing with funding institutions, publishers, employers, professional organizations; ethical and applied problems of the professional. Assignment is first draft of research proposal.

240 • Field Methods in Cultural Anthropology (4) Bohannon

Selecting peoples for study, carrying out field research, writing reports, control and analysis of the self as the medium of investigation.

250 • Method and Theory in Anthropology (4) Staff

A discussion of general problems in anthropology.

252 • Social Anthropology (4) Brown

Seminar on selected topics in social anthropology.

253 • Explanation in Anthropology (4) Erasmus

Seminar discussions of articles on religion, peasantry, functionalism, and culture change. Students trained to analyze research objectives and explanatory procedures of anthropologists and to write forceful, brief critiques.

254 • Ethnohistory (4) Staff

Seminar on selected topics in ethnohistory.

269 • Area Studies in Anthropology (4) Staff

May be taken for credit as often as available from different professors emphasizing different regional areas.

270A • Problems in African Ethnology (4) Brokensha

Seminar in selected problems in ethnology of Africa.

270B • Problems in Far Eastern Ethnology (4) Staff
Seminar in selected problems in ethnology of the Far East.

270C • Problems in Southeast Asian Ethnology (4) Brown
Seminar in selected problems in ethnology of Southeast Asia.

270D • Problems in South Asian Ethnology (4) Mines
Seminar in selected problems in ethnology of South Asia.

270E • Problems in Middle Eastern Ethnology (4) Staff
Seminar in selected problems in ethnology of the Middle East.

270F • Problems in Oceanic Ethnology (4) Harding.
Seminar in selected problems in ethnology of Oceania.

270G • Problems in Latin American Ethnology (4) Staff
Seminar in selected problems in ethnology of Latin America.

280 • Physical Anthropology (4) Staff

281 • Current Problems in Physical Anthropology (4) Staff
To develop student's sense of problem and critical faculties. Comprehensive reading lists and discussions.

282 • Physical Anthropology of North American Indians (4) Staff
Prerequisite: Consent of instructor.

Physical variation in indigenous North American populations; methods and theory in analysis; implications for the peopling of the New World. Combined lecture and seminar format.

596 • Directed Reading and Research (2-6) Staff
Individual tutorial.

598AA—ZZ • Master's Thesis Research and Preparation (2-6) Staff
Individual tutorial.

599 • Ph.D. Dissertation Preparation (2-6) Staff
Individual tutorial.

Department of Art and Art History

Art History

Professors

Larry M. Ayres, Ph.D., *Harvard University; Medieval art.*
(Chairperson)

Mario A. Del Chiaro, Ph.D., *UC Berkeley; Ancient Art.*

Henri Dorra, Ph.D., *Harvard University; 19th and 20th century art.*

Beatrice Farwell, Ph.D., *UC Los Angeles; 19th and 20th century art.*

¹David S. Gebhard, Ph.D., *University of Minnesota; History of Architecture.*

Peter T. Meller, Ph.D., *Budapest; Renaissance art.*

¹Alfred K. Moir, Ph.D., *Harvard University; Baroque art.*

Associate Professors

Herbert M. Cole, Ph.D., *Columbia University; African, Oceanic, American Indian art.*

Prudence R. Myer, Ph.D., *Radcliffe College; Oriental art.*

Assistant Professors

Burr E. Wallen, Ph.D., *New York University; Northern Renaissance, prints.*

² ³Fikret K. Yegul, Ph.D. *Harvard University; Roman art and architecture.*

Lecturer

Corlette R. Walker, Ph.D., *Bryn Mawr; 18th and 19th century art.*

¹Absent on Leave Fall 1980

²Absent on Leave Winter 1981

³Absent on Leave Spring 1981

Concerns of the Department

The undergraduate program in art history is directed toward a B.A. degree. It is designed to provide the undergraduate with a thorough and comprehensive basic training in and understanding of art as a humanistic activity, and to offer basic training to students who look forward to graduate training as professional historians of art, museum curators, or critics.

The major requires certain basic lower division courses as prerequisites to more advanced work. The Department recommends that the Art History 6A, B, C series be taken in conjunction with History 4A, B, C.

For further details regarding course offerings, check with the Art History Department office, located in Arts 1316. Exceptions to departmental requirements must be made through this same office.

The Department of Art History also offers graduate programs leading to the M.A. and Ph.D. degrees, as described below.

Departmental Advising and Publications

Requests for special advising should be channeled through the Undergraduate Adviser. The department publishes a list of Art History courses that describe the content

of the courses offered each quarter. This material is available for study prior to preenrollment in classes each quarter.

Bachelor of Arts - Art History

Preparation for the major

Required: 32 units in lower division courses including:

Art History 6A-B-C 12 units

Two courses from Art History 1 or 6D or 6E or 6F or 7A or 7E 8 units

History 4A-B-C 12 units *Recommended but not required:*

French 3 or German 3 or Italian 3 or Spanish 3. Students planning graduate training in Art History are advised to develop a reading knowledge of German and French or Italian.

Upper Division major

Required: 40 units in upper division Art History courses including:

Art History 152F or 152I 4 units

Art History 153 series 4 units

Art History 155-156 series 4 units

Art History 157-158 series 4 units

Art History 159-160 series 4 units

Art History 151 or 161 or 181 or 182 or 183 4 units

Art History electives (upper division) 16 units.

Master of Arts—Art History

Admission and Degree Requirements

Applications for teaching assistantships must be received in the Graduate Division by February 15.

The Master of Arts is offered in the following major areas or fields of art: Primitive, Ancient, Medieval, Renaissance, Baroque and Rococo, 19-20th Century, American, Pre-Columbian, Asian Art, and History of Architecture.

1. Candidates usually present a bachelor's degree in art history with not less than a B plus (3.3) average in the major. They are expected to know the general history of Western art and architecture and have some knowledge of at least one non-western artistic tradition.

2. After admission to graduate standing, every student must demonstrate ability to read one foreign language instrumental to art historical research (normally French or German). The requirement should be fulfilled before the second year of residence.

3. Every student will take a two-hour general examination on the history of art (major styles, monuments, artists, and concepts) as presented in standard art survey texts. This test must be passed before the student can be advanced to candidacy.

4. Students will follow one of the following plans:
Plan I: a minimum of 30 credit units of work and a thesis.
Plan II: a minimum of 36 credit units of work and a comprehensive examination.

All M.A. students must take at least 16 credit units in graduate seminars in at least three different fields. Their other work will be drawn from the list of upper-division courses, graduate seminars, and reading and research courses taught by the art history faculty.

5. Candidates demonstrating exceptional achievement

may be awarded Departmental Honors.

6. The degree requires a minimum of three quarters of intensive work but students are encouraged to complete it within six quarters. Specialty dependent on faculty availability.

Doctor of Philosophy-Art History

Admission and Degree Requirements

The Ph.D. degree in Art History is offered in the following major areas or fields of art: Primitive, Ancient, Medieval, Renaissance, Baroque and Rococo, 19-20th Century, American Art and the History of Architecture.

The Ph.D. program is designed for mature and well-trained scholars who have a sound foundation in Art History.

1. Candidates for admission to the program must have completed a master's degree in the History of Art. A copy of the M.A. thesis or a substantial paper of a scholarly nature, such as a seminar report, should be submitted at the time of application.

2. Students entering the program will take a four-hour exploratory examination in the History of Art with emphasis on the area of their intended specialization.

3. Before advancement to candidacy, students must demonstrate ability to read German as well as French or another language essential to the field of specialization.

4. The program requires not less than 24 units of graduate work (seminars and reading and research courses). At least 16 units must be taken in graduate seminars. It is to be planned around one major and one minor field. Students who did the M.A. in Art History at U.C.S.B. and took more than the required number of graduate-level units may petition to have the excess applied toward the Ph.D. Students who have shown weaknesses in the exploratory examination may be required to take supplementary work to make up deficiencies.

5. At the end of the first year the student's work will be reviewed by the faculty to see whether it satisfies the standards of the Department and the University.

6. The student will take a written examination in both the major and the minor fields.

7. Not later than four years after starting the program the student will submit a preliminary outline of the proposed dissertation. A Doctoral Committee will be appointed to supervise the program of research. The Committee will also administer the oral qualifying examination.

8. The dissertation, which will be primarily on the major field, will be carried out under the direction of the student's adviser and Doctoral Committee. It must be an original contribution to the History of Art.

Career opportunities

Art History majors: The major in art history prepares students for careers in teaching, research, art administration, art criticism, historic preservation, journalism, and museum and gallery professions.

Correspondence information

Department of Art History, Arts Building, Room 1316, University of California, Santa Barbara, California 93106. Phone: (805) 961-2417.

Art History

Yearly schedule varies—Check with department.

Freshmen Seminars

To be offered on an irregular basis. For additional information see Department.

Lower Division courses

1 • Introduction to Art (4) Staff [C]

A study of art as a medium of expression.

6A • Art Survey I Ancient Art (4) Del Chiaro [C]

From the Stone Age to the end of The Roman Empire.

6B • Art Survey II Medieval Art (4) Ayres [C]

From the Early Christian Period to the Renaissance.

6C • Art Survey III Renaissance-Modern Art (4) Moir [C]

From the Renaissance through Modern Art.

6D • Survey-Asian Art (4) Myer [C]

The Arts of India, China and Japan.

6E • Survey-Exotic Arts (4) Cole [C]

A conceptual, cross-cultural introduction to Amerind, Eskimo, African, and Oceanic Arts: Artists, sculpture, festivals, body decoration, masking, architecture, and painting will be seen in the context of social and religious values. Films, slides and museum tours.

6F • Survey-Architecture and Planning (4) Gebhard, Yegul [C]

The architect and planner in history; technical and formal means used; individual buildings and urban plans from the past to the present will be used as examples.

7A • Politics in Art Since 1800 (4) Walker [C]

Rise of the Avant-Garde in art and revolutions.

7E • Pre-Columbian Art (4) Cole [C]

An introduction to 5000 years of Pre-Columbian art in Mexico, Central American and Peru, to be approached through major monuments of sculpture, architecture, ceramics, textiles, and painting, and against the background of early American religious social and political institutions.

Upper Division courses

150 • Art in the Modern World (4) Walker [C]

Prerequisite: Upper Division standing. For non-majors only or consent of instructor.

An examination of art of the last 100 years. Treats painting, architecture, and sculpture in a manner that emphasizes the social, economic and cultural background.

151C • Arts of the South Seas (4) Cole [C]

Prerequisite: 6E, Upper Division standing.

An introduction to masking, sculpture, festivals, body decoration and architecture of Melanesia, Micronesia and Polynesia, stressing the relationship of art to life.

151D • North American Indian Arts (4) Cole, Gebhard [C]

Prerequisite: Upper Division standing.

A survey of the prehistoric and ethnographic Indian and Eskimo arts: Emphasis on social, ceremonial, and religious contexts of masks, dress, sculpture, painting, architecture, pottery, and basketry. Films, slides, and museum visits.

151F • African Art—I (4) Cole [C]

Prerequisites: 6E, Upper Division standing.

The relationship of art to life in sub-Saharan Africa. A cross cultural survey of types, styles, history, and values of arts ranging from personal decoration to the state festival, stressing Ashanti, Ife, Benin, Yoruba, Cameroon.

151G • African Art—II (4) Cole [C]

Prerequisites: 6E, 151F or consent of instructor. Upper Division standing.

An in-depth continuation of 151F in a Seminar/discussion format. Selected topics in masking, figural sculpture, etc. and emphasis on African contexts of ritual and social life.

151H • The Art of Festivals (4) Cole [C]

Prerequisites: 6E, Upper Division standing.

An examination of African, Oceanic, and American Indian festivals and rituals as works of art; structural and functional analyses of ceremonies recorded on film and video-tape. Emphasis on the aesthetic interaction of dance, music, gesture, and the visual arts.

152A • Ancient Art: Egypt (4) Del Chiaro [C]

Prerequisite: Recommended preparation: 6A. Upper Division standing.

The architecture, sculpture and painting of ancient Egypt from prehistoric through Roman times.

152E • Ancient Art: Greece I (1100-500 B.C.) (4) Del Chiaro [C]

Prerequisite: Recommended preparation: 6A. Upper Division standing.

The architecture, sculpture and painting of ancient Greece from the Iron Age (Geometric Period) to the beginning of the fifth century Classical Period; emphasis on the Archaic Period.

152F • Ancient Art: Greece II (500-30 B.C.) (4) Del Chiaro [C]

Prerequisite: Recommended preparation: 6A, 152E. Upper Division standing.

The architecture, sculpture and painting of ancient Greece from the fifth century Classical Period through the Hellenistic Age to the advent of the Roman Empire.

152G • Ancient Art: Etruscan Art (4) Del Chiaro [C]

Prerequisite: Recommended preparation: 6A, 152E and F. Upper Division standing.

The architecture, sculpture and painting of ancient Italy from prehistoric times through the Etruscans; emphasis on the Etruscans.

152H • Ancient Art: The Roman Empire I (509 B.C.-A.D. 69) (4) Yegul [C]

Prerequisite: Recommended preparation: Art 6A. Upper Division standing.

The architecture, sculpture and painting of ancient Rome and the Early Empire from the beginning of the Republic through the Julio-Claudian era.

152I • Ancient Art: Roman Empire II (A.D. 69-337) (4) Yegul [C]

Prerequisite: Recommended preparation: 6A. Upper Division standing.

The architecture, sculpture and painting of the Roman Empire from the Flavian emperors through the Constantinian Age.

152J • Ancient Art: Greek Architecture (4) Yegul [C]

Prerequisite: Recommended preparation: 6A. Upper Division standing.

The architecture of the Greek World from the Archaic Period through the Hellenistic Age.

152K • Ancient Art: Roman Architecture (4) Yegul [C]

Prerequisite: Recommended preparation: 6A. Upper Division standing.

The architecture of Rome and the Empire.

152L • Ancient Art: Late Roman and Byzantine Architecture (4) Yegul [C]

Prerequisite: Recommended preparation: 6B. Upper Division standing.

The architecture of the post-Constantinian world and that of the Early Byzantine and Justinianic Periods.

153A • Medieval Art: Early (4) Ayres [C]

Prerequisite: Upper Division standing.

Architecture, sculpture, painting and the minor arts of the Early Middle Ages in Western Europe from the fourth to the eleventh century.

153B • Medieval Art: Byzantine (4) Ayres [C]

Prerequisite: Upper Division standing.

Architecture, sculpture and painting and the minor arts of the Byzantine world from 330 to 1453 A.D.

153C • Medieval Art: Romanesque (4) Ayres [C]

Prerequisite: Upper Division standing.

Architecture, sculpture and painting of the Romanesque period in Western Europe from 1050 to 1200 A.D.

153D • Medieval Art: Gothic (4) Ayres [C]

Prerequisite: Upper Division standing.

Architecture, sculpture and painting of the Gothic period in Western Europe from 1150 to 1400 A.D.

153E • Medieval Art: Italy, 13th and 14th Centuries (4) Ayres [C]*Prerequisite: Upper Division standing.*

The emergence of humanistic and civic ideas in the art of the Italian Trecento and Quattrocento. A survey of large civic programs of secular and secularized ecclesiastical art of the two centuries. Sculpture, architecture and painting will be discussed.

153F • Gothic Painting 1200-1400 (4) Ayres [C]*Prerequisite: Upper Division standing.*

The origins and development of Gothic painting in France, England, and the Lower Rhineland with special reference to Parisian manuscript illumination and to the influence of Italian art in the North during the fourteenth century.

***154B • Pre-Columbian Art of South America** (4) Staff [C]*Prerequisite: Upper Division standing*

The architecture, sculpture, ceramics, textiles and metalwork of the Andean civilizations from 3000 B.C. to 1532 A.D. will be examined from the technical, formal iconographical standpoints.

***154C • Pre-Columbian Art of Mexico and Central America** (4) Staff [C]*Prerequisite: Upper Division standing.*

The course will treat all of the arts of the Mesoamerican civilizations from 1500 B.C. to 1520 A.D. with emphasis on the growth of formal traditions and the symbolism they carried.

155B • 15th Century Painting in Northern Europe (4) Wallen [C]*Prerequisite: Upper Division standing.*

The development of painting in the Lowlands, Germany and France from c. 1380 to 1500. Major artists include Jan van Eyck, Hieronymus Bosch and the young Dürer. The course explores related stylistic and iconographical aspects of sculpture, tapestry, prints and goldsmithwork.

155C • Renaissance Art in Fifteenth Century Italy 1400-1450 (4) Meller [C]*Prerequisite: Upper Division standing.*

Fifteenth century painting, sculpture and architecture in Italy, principally Florentine from 1400-1450.

155D • Renaissance Art in Fifteenth Century Italy 1450-1500 (4) Meller [C]*Prerequisites: 155C. Upper Division standing.*

Fifteenth century painting, sculpture and architecture in Italy, principally Florentine from 1450-1500.

156A • Italy: High Renaissance (4) Meller [C]*Prerequisite: Upper Division standing.*

Roman and Florentine painting, sculpture and architecture from Leonardo to the sack of Rome.

156B • Sixteenth Century Art in Northern Europe (4) Wallen [C]*Prerequisite: Upper Division standing.*

Painting, sculpture, graphic and decorative arts in the Lowlands, Germany, France and England. Dürer, Holbein, Grünewald, Bruegel and the School of Fontainebleau will be covered. The impact of Italian Renaissance and Mannerism of Northern art.

156C • Mannerism (4) Meller [C]*Prerequisite: Upper Division standing.*

Analysis of the pan-European style of Mannerism in architecture, painting and sculpture.

156D • Venetian Painting (4) Meller [C]*Prerequisite: Upper Division standing.*

The evolution of Venetian painting from Jacopo Bellini to Jacopo Bassano.

156E • Michelangelo (4) Meller [C]*Prerequisite: Upper Division standing.*

The study of the sculpture, painting, architecture and drawings of Michelangelo.

156F • Leonardo da Vinci (4) Meller [C]*Prerequisite: Upper Division standing.*

An examination of the development of the art of Leonardo da Vinci.

157A • Baroque Painting in Italy (4) Moir [C]*Prerequisite: Upper Division standing.*

Baroque painting in Italy during the seventeenth and early eighteenth centuries.

157B • Italian Baroque Architecture and Sculpture (4) Moir [C]*Prerequisite: Upper Division standing.*

A study of the works of the major architects and sculptors active in Italy from the beginning of the seventeenth century until early eighteenth century.

157C • Northern Baroque Art (4) Moir [C]*Prerequisite: Upper Division standing.*

Architecture, sculpture and painting in Flanders, Holland and France; seventeenth and early eighteenth centuries.

157D • Caravaggio and His Followers (4) Moir [C]*Prerequisites: 6C. Open only to UD Art History majors and Graduate Students.*

Lectures on Caravaggio and the dissemination of his style; analysis of literary sources; discussion of problems of connoisseurship, attribution, and iconography, and copyists; reconstruction of lost works.

158A • Eighteenth Century Art: 1685-1750 (4) Walker [C]*Prerequisite: Upper Division standing.*

Painting, sculpture and architecture in Europe. Course will emphasize painting of France, England and Venice. Will also emphasize the international character of Rococo.

158B • Eighteenth Century Art: 1750-1810 (4) Walker [C]*Prerequisite: Upper Division standing.*

Painting, sculpture and architecture in Europe from 1760-1810. The course will emphasize the theories underlying these interrelated movements, e.g. Primitivism, Exoticism, Historicism.

159A • Art in 19th Century Culture I (4) Dorra [C]*Prerequisite: Upper Division standing.*

Major Neo-classical, Romantic and Realist painters and sculptors in France and other Western-European countries, from Goya to Courbet.

159B • Art in 19th Century Culture II (4) Dorra [C]*Prerequisite: Upper Division standing.*

Impressionism, Post-impressionism, Manet, Degas, Monet, Renoir, Seurat, Redon, Gauguin, van Gogh, Cezanne are among those discussed.

159C • Nineteenth Century Architecture (4) Gebhard [C]*Prerequisite: Upper Division standing.*

European and American planning and architecture from 1790 through 1914. Neo-Rationalism to the beginning of the "Early Modern Movement." The course will treat the relationship between theory, structure, form and practice during the nineteenth century.

159D • Victorian Art (4) Walker [C]*Prerequisite: Upper Division standing.*

English art from 1800 to 1900. Primary emphasis will be on English painting and its relation to nineteenth century continental art. Architecture and sculpture will also be considered.

159E • French Painting and Graphic Arts 1800-1875 (4) Farwell [C]*Prerequisite: Upper Division Standing.*

Leading painters from Ingres through Manet; the Academy; the rise of new graphic techniques and photography as art media and as popular imagery; interrelations of high and popular culture.

160A • 20th Century Architecture (4) Gebhard [C]*Prerequisite: Upper Division standing.*

European and American architecture from 1920 to the present. Expressionism, the International Style, "Period" architecture, the Moderne and the Post World War II movements. The relationship between architecture, design, painting and the political and social scene during these decades.

160B • Art in 20th Century Culture I (4) Dorra [C]*Prerequisite: Upper Division standing.*

Art Nouveau, Fauvism, Cubism, Futurism and Expressionism. Matisse, Picasso, Kirchner, Kandinsky are among those discussed.

160C • Art in 20th Century Culture II (4) Dorra [C]*Prerequisite: Upper Division standing.*

Surrealism and its aftermath; geometric abstractions; abstract expressionism; developments of the sixties throughout the world (op, pop, kinetic, systemic, minimal, conceptual, etc.)

160D • Expressionism in Film, Art, and Theater (4) Staff*Prerequisite: Upper Division standing.*

Treating the social theory, aesthetics and artistic techniques of expressionism in art, literature and film. (The German department offers this same course under 160D.)

161A • American Art I (4) Walker [C]*Prerequisite: Upper Division standing.*

American art, including architecture, sculpture and painting before the Armory Show, 17th century through 19th century.

161B • American Art II (4) Farwell [C]*Prerequisite: Upper Division standing.*

Survey of American Art from the Armory Show

*Specialty dependent on faculty availability.

to the present, with major emphasis on development in painting and sculpture after World War II.

***161C • Art in Colonial Spanish America (4) Staff [C]**

Prerequisite: Upper Division standing.

Architecture, sculpture, painting and minor arts produced in the Spanish possessions, especially Mexico and Peru, from 1620 to 1820. The development of local tendencies and the relations to European art will be stressed.

***161D • Hispanic-American Arts (4) Staff [C]**

Prerequisite: Upper Division standing.

The arts of Latin America from the seventeenth to the twentieth century; the flowering of regional and provincial schools; Neo-Classicism, and the development of modern forms in the international styles.

***161E • Modern Mexican Painting (4) Staff [C]**

Prerequisite: Upper Division standing.

Emphasis on the social-realist art of the muralists Rivera, Orozco and Siqueiros.

161F • American Art of the 20th Century I: 1900-1939 (4) Staff [C]

Prerequisite: Upper Division standing.

Twentieth century painting, sculpture and architecture in the United States to the eve of World War II. The Eight, the Armory show, American abstractionists and realists, government patronage, Americans in Europe, Mexican and European artists in the U.S.

161G • American Art of the 20th Century II: World War II to Present (4) Staff [C]

Prerequisite: Upper Division standing.

Recent 20th century painting, sculpture and architecture in the United States. Abstract expressionism, color-field, pop and new realist painting; pop and minimalist sculpture to earth-works, conceptual art, other recent trends.

***163B • Spanish Arts—Renaissance to Modern (4) Staff [C]**

Prerequisite: Upper Division standing.

Fusion of local Spanish types with the Renaissance. Development of Baroque, Neo Classic and the emergence of nineteenth and twentieth century forms. Studies in architecture, sculpture, painting and the minor arts.

164A • The Landscape (4) Moir [C]

Prerequisite: Upper Division standing.

What Western European artists from the Renaissance to the present have seen in their physical environment (mainly rural but also urban), how they have recorded it, and what it means. Reading, field trips, discussion, papers.

164B • The History of Rome as a Modern City (4) Moir [C]

Prerequisite: Upper Division standing.

A study of the evolution of the urban structure of Rome from the Renaissance to the present. The emphasis will be on the city as an evolving formal entity rather than on individual buildings or on urban sociology.

164C • Museum Practices & Techniques (4) Dorra [C]

Prerequisites: Upper Division standing. Consent of instructor.

Discussion of various aspects of museum work: Management principles, the cataloguing and care of art objects, exhibitions and acquisitions, administrative procedures, museum architecture. Specialist lecturers and visits to museums and their facilities. Limited enrollment.

165A • Theories of Architecture (4) Gebhard [C]

Prerequisite: Upper Division standing.

An historical analysis of the relationship between architectural theories and architecture and urban planning from the fifteenth through the twentieth century.

165B • Islamic Architecture (4) Gebhard [C]

Prerequisite: Upper Division standing.

Islamic architecture of North Africa; of the Near and the Middle East from the eighth through the eighteenth centuries.

165C • An Architectural History of Urban Design (4) Staff [C]

Prerequisite: Upper Division standing.

An historical introduction to urban planning and the city in history from ancient to modern times. Course will be taught from the viewpoint of architectural history.

168A • The History of Graphic Art (4) Wallen [C]

Prerequisite: Upper Division standing.

A survey of the history of fine prints since the invention of printmaking in the 15th century to the present. Different types of printmaking will be discussed and such great masters as Durer, Rembrandt, Goya, Daumier and Picasso.

***168B • History of Photography (4) Staff [C]**

Prerequisite: Upper Division standing.

A critical survey of nineteenth and twentieth century photography. The medium is studied in cultural context with emphasis on images and the visions which produced them. We will also study the relation between photography and art movements (Impressionism, Surrealism, Photorealism, etc.)

169 • Analysis (4) Farwell [C]

Prerequisite: Upper Division standing.

This course is strongly recommended as an elective for those students contemplating professional work in art history. The study of artistic form and visual perception as a tool for the art historian's study of style and expression.

181 • The Art of India (4) Myer [C]

Prerequisites: Art 6D or permission of instructor. Upper Division standing.

The rise and development of native styles in architecture, sculpture and painting, with emphasis on Hindu and Buddhist problems.

182A • Early Chinese Art (4) Myer [C]

Prerequisites: Art 6D or permission of instructor. Upper Division standing.

Native traditions and foreign influences in the development of Chinese art from prehistoric times through the ninth century.

182B • Chinese Painting (4) Myer [C]

Prerequisites: Art 6D or permission of instructor. Upper Division standing.

Chinese art from the tenth to the eighteenth century, with emphasis on painting.

183A • The Art of Japan (4) Myer [C]

Prerequisites: Art 6D or permission of instructor. Upper Division standing.

Native traditions and foreign influences in the development of Japanese architecture, sculpture, painting and minor arts.

183B • Japanese Painting (4) Myer [C]

Prerequisites: Art 6D or permission of instructor. Upper Division standing.

This course will trace the changing and entwined traditions of Japanese painting, those rooted in native concepts and practices and those derived from China.

194 • Special Group Studies (2-4) Staff

Prerequisites: Qualified Upper Division students and consent of instructor and chairman of department.

A means of making special studies or meeting special curricular problems. No more than 4 units per quarter and 12 units total may be taken "in lieu" of major requirements. Limited to groups of 3-12 persons.

****199 • Independent Studies (1-5) Staff**

Prerequisites: Consent of instructor and previous completion of 84 units.

Advanced individual problems. 199 courses are limited to no more than 5 units in one quarter and no more than 30 units total.

Graduate courses

250A • Methods and Techniques in Art History Research (4) Moir

Prerequisite: Graduate standing.

Reading and a series of discussions and research problems designed to give the student understanding of the different approaches to historical study of works of art.

250B • Connoisseurship (4) Moir

Prerequisite: Graduate standing.

Reading, discussion, and practical experience in qualitative analysis of works of art, with particular emphasis on drawings, prints and medals.

250C • Seminar: History of Printmaking (4) Wallen

Prerequisite: Art 168A History of Graphic Art or equivalent and graduate standing.

The seminar deals with outstanding printmakers whose work can be seen in the Santa Barbara area. Relevant art historical issues are explored in addition to problems of print connoisseurship.

251B • Seminar on African Arts in Context (4) Cole

Prerequisite: Graduate standing.

Special research in African art.

*Specialty dependent on faculty availability.

**See N-2 for 198 / 199 independent studies unit limitations.

251C—D • Seminar in Non-Western Arts (4-4) Cole

Prerequisite: Graduate Standing.

A continuous, two quarter seminar on selected topics in African, Oceanic, and/or American Indian Arts. Individual quarters may not be taken separately for credit. Specific course focus announced before course begins.

252A • Seminar in Ancient Art (4) Del Chiaro

Prerequisite: Graduate standing.

Special research in ancient art.*

252B • Seminar in Roman Art (4) Yegul [C]

Prerequisites: Graduate standing or senior Art History majors with instructor's consent.

Special research in Roman and Late Antique Architecture.

252C • Theory and Historiography of Roman Art (4) Yegul

Prerequisites: Graduate standing or senior Art History majors with instructor's consent.

Theory, method and historiography of Roman and Late Antique art. Emphasis on special problems of current and historical importance. General considerations of methodology in Art History.

253A • Seminar in Medieval Art (4) Ayres

Prerequisite: Graduate standing

Special research in medieval art.

253B—C • Seminar in Romanesque-Gothic Art (4-4) Ayres

Prerequisite: Graduate standing.

Special research Mosan romanesque and gothic art. Two sections of the seminar will be held. One section for those wanting to take 2 quarters with "IP" grade; the other section for those wanting to take 1 quarter for a letter grade.

***254 • Seminar in Pre-Columbian Art (4) Staff**

Prerequisite: Graduate standing.

Special research in pre-Columbian art.

255A—B • Seminar in Renaissance Art (4-4) Meller

Prerequisite: Graduate standing.

Special research in Renaissance art. A continuous two-quarter seminar.

255C • Seminar in Renaissance Art (4) Meller

Prerequisite: Graduate Standing.

Introduction to the Research Method: problems of the figurative and decorative arts of the Renaissance period.

255D • Art of the Renaissance in Northern Europe (4) Wallen

Prerequisite: Graduate standing.

Special research in Northern Renaissance figurative arts of the fifteenth and/or sixteenth centuries.

257A • Seminar in Baroque Art (4) Moir

Prerequisite: Graduate standing.

Special research in baroque art.

257B—C • Seminar in Baroque Art & Drawings (4-4) Moir

Prerequisite: Graduate standing.

Study of original drawings of the 16th, 17th & 18th centuries in relation to painting, sculpture and architecture of the Baroque era, with emphasis on Italy. Practice in research, cataloguing & connoisseurship will sometimes result in an exhibition catalogue.

258A • Seminar in Eighteenth Century Art (4) Walker

Prerequisite: Graduate standing.

Special research in eighteenth century art with special emphasis on painting and prints.

258B—C • Seminar in Eighteenth Century Art (4-4) Staff

Prerequisite: Graduate Standing.

Special research in eighteenth century art. A continuous two-quarter seminar.

259A—B • Seminar in Nineteenth Century Art (Impressionism and Post Impressionism) (4-4) Dorra

Prerequisite: Graduate standing.

Special research in nineteenth century art. A continuous two-quarter seminar. Individual quarters may not be taken separately for credit.

259C • Seminar in Romanticism and Realism (1800-1860) (4) Farwell

Prerequisite: Graduate standing.

259E-F • Seminar in Romanticism and Realism (1800-1860) (4) Farwell

Prerequisite: Graduate Standing.

One section for those wanting to take 2 quarters with "IP" grade. The other section for those wanting to take 1 quarter for a letter grade.

260A—B • Seminar in European Art of the Twentieth Century (4-4) Dorra

Prerequisite: Graduate standing.

Special research in twentieth century art. A continuous two-quarter seminar. Individual quarters may not be taken separately for credit.

260D • Seminar in European Art of the Twentieth Century (4) Dorra

Prerequisite: Graduate standing.

Special research in twentieth century art.

261A • Nineteenth Century American Art (4) Walker

Prerequisite: Graduate standing.

Problems in nineteenth century art.

261B • Twentieth Century American Art (4) Farwell

Prerequisite: Graduate standing.

American painting and sculpture, 1940-1960, with primary emphasis on the formation and development of Abstract Expressionism.

261C—D • Nineteenth Century American Art (4-4) Staff

Prerequisite: Graduate Standing.

Special research in nineteenth century american art. A continuous two-quarter seminar. Individual quarters may not be taken separately for credit.

265 • Seminar in Architectural History (4) Gebhard, Yegul

Prerequisite: Graduate standing.

Special research in the history of architecture.

282 • Seminar in Oriental Art (4) Myer

Prerequisite: Graduate standing.

Special research in Oriental art.

595 • Group Studies (2-6) Art History Faculty

Prerequisites: Graduate standing; consent of instructor and chairman of department.

Critical review of research in selected fields.

596 • Reading and Research in Art History (2-6) Art History Faculty

Prerequisites: Graduate standing, consent of instructor and chairman of department.

Individual Tutorial. A written proposal for each tutorial must be approved by the department chairman and filed with the Graduate Division prior to the appropriate quarter. Total units taken not to exceed half of those required for Master's degree.

596MC • Directed Reading and Research in Art History (2-6) Art History Faculty

Prerequisites: Graduate standing; consent of graduate adviser.

Readings and study towards comprehensive examination for MA. For Plan II students only.

597D • Individual Study (1-12) Art History Faculty

Prerequisites: Graduate standing; consent of graduate adviser.

Individual study for examination for the Ph.D. degree. Limited to 12 units per quarter and 24 units total. No unit credit allowed toward degree.

598T • Master's Thesis Research and Preparation (1-12) Art History Faculty

Prerequisites: Graduate standing; consent of graduate adviser.

Research underlying the thesis; writing the thesis. No credit allowed toward degree. Plan I students only.

599D • Ph.D. Dissertation Preparation (1-12) Art History Faculty

Prerequisites: Graduate standing; consent of graduate adviser.

Terminal preparation of the dissertation. Maximum of 12 units total.

*Specialty dependent on faculty availability.

Art Studio

Professors

Gary H. Brown, M.F.A., *University of Wisconsin; Painting and Drawing*

Irma Cavat; *Painting and Drawing*

Steven M. Cortright; M.A., *Stanford University;*

Printmaking (Chairperson)

William Dole; M.A., *UC Berkeley; Painting and Drawing*

Bruce S. McCurdy; M.F.A., *Yale University; Printmaking*

Conway J. Pierson; M.F.A., *California College of Arts and Crafts; Ceramics*

James D. Smith; Ph.D., *University of Oregon; Painting and Drawing; Credential Program*

Robert C. Thomas, M.F.A., *California College of Arts and Crafts; Sculpture*

Associate Professors

Michael A. Arntz; M.A., *California State University, Long Beach; Ceramic Sculpture*

Sheldon A. Kaganoff; M.F.A., *Claremont Graduate School; Ceramics*

William R. Ptaszynski; *Painting and Drawing*

William R. Rohrbach; M.A., *UC Berkeley; Painting and Drawing*

Guy Williams; *Painting and Drawing*

Assistant Professor

Cheryl O. Bowers; M.F.A., *San Francisco Art Institute; Painting and Drawing*

Lecturers

Ludwig Real, M.A., *Trade School for Metal Smiths, Vienna; Sculpture*

Richard Ross, M.F.A., *University of Florida; Printmaking and Photography*

Professors Emeriti

Catherine C. Campbell; M.A., *Claremont Graduate School*

Howard C. Fenton; M.A., *UC Los Angeles*

Jacob Lindberg-Hansen; M.A., *Claremont Graduate School*

Concerns of the Department

The undergraduate program in art is directed toward a B.A. degree in Art Studio. It is designed primarily to serve two purposes; to provide the undergraduate with a thorough and comprehensive basic training in and understanding of art as a humanistic activity and to provide students who wish to become practicing artists with the foundations which will prepare them for graduate work and professional schools.

The major requires certain basic lower division courses as prerequisites to more advanced work. Within the Art

Studio major, students may choose to emphasize painting and drawing, printmaking, sculpture, or ceramics.

Students who plan to enter the teaching field at the junior high and senior high levels are encouraged to select the Art Studio major. They are further advised to choose a wide range of courses covering as many areas in studio as possible.

For further details regarding course offerings, check with the Department of Art office. Exceptions to art departmental requirements may be made by petition through the Department of Art office. The acceptance of transfer units from the College of Creative Studies into the Art Studio major will be limited.

The Department of Art also offers a graduate program leading to the M.F.A. degree, as described below.

Departmental Advising and Publications

Requests for special advising should be channeled through the Undergraduate Adviser. The department publishes a Syllabus describing the content of the Studio courses. This material is available for study prior to *pre-enrollment in classes each quarter*.

Bachelor of Arts—Art Studio

Preparation for the major

Required: 37 units in lower division courses including:

Art Studio 5A-B-C 9 units

Art Studio 10, 12, 14, 16, 18 or 19 (4 courses) 12 units

*Art History 6 series (2 courses) 8 units

History (2 courses) 8 units

Upper Division major

Note: All but one of the lower division preparation for the major requirements must be completed before a student can enroll in an upper division studio course.

Required: 44 units in upper division courses including:

32 units selected from: Art Studio 100, 101, 105, 106, 110, 111, 115, 116, 118, 119, 120 (Art Studio 101, 106, 111, 116 and 119 may be taken with instructor's consent.)

* 12 units of Art History (up to 4 of these units may be in lower division) 12 units

For those students who plan to attend Graduate School, the Department recommends completion of a minimum of 16 units within a given area of interest (i.e., painting, sculpture, printmaking or ceramics) and 4 additional units of upper division art history.

All studio courses require three hours of work per week for each unit of credit. Studio courses may include combinations of subjects and media and will be defined in a syllabus which will be available to students in the Art De-

*Studio majors may take any eight units of art history requirements P/NP

partment office. In this syllabus, each faculty member will describe how the class will be conducted, what kinds of materials the students will work with, etc. The syllabus was designed as a guide by which students may select their classes on a more meaningful basis.

Master of Fine Arts - Arts Studio

Application Deadlines

Because of the restricted enrollments and selective nature of the Master of Arts program, admission will be limited to the Fall Quarter. *No applications will be accepted for Winter or Spring Quarter admission.* A slide portfolio, completed applications for admission and teaching assistantships, and other required material must arrive at the Graduate Division by *February 15*. Note: Fellowship applications, due January 15, must be accompanied by an additional six slides. ¹

Admission to the MFA Program

In addition to fulfilling the general requirements for admission to graduate status, the department requires a Bachelor of Arts in art or its equivalent, with a superior record. The applicant must demonstrate outstanding accomplishment as a student artist by submitting slides of student work. Applicants are reviewed by the full studio faculty and admission is contingent on sponsorship by a faculty member with support of two additional faculty who will form an admitting committee of three. Applicants will be ranked and admitted depending on available space.

First Year

There will be two first year reviews. The initial meeting will occur at the end of the second quarter with the admitting Committee of Three. Following this review the student has the option of retaining the Committee of Three, or a new committee, hereafter called the Thesis Committee. The second review will occur at the end of the third quarter (after completion of 20-30 units). At this time, the Thesis Committee plus the Graduate Advisor and one other appointed faculty member will decide by majority vote to advance the student to second year candidacy.

Second Year

At the beginning of the second year, the student will meet with the Thesis Committee to determine the nature of the Thesis Project. This project will consist of a group of related works in the student's emphasis, and upon completion, will be presented in the form of a one or two-person exhibition in the Art Museum. It will be accompanied by a thesis document containing slides of the project and including a written essay which addresses itself to the development,

content, and issues of the thesis work. This booklet will become a permanent part of the Art Library. The Thesis Committee will review the student's progress at the end of the second quarter or coincidental with the MFA exhibition. The degree will be awarded after completion of the thesis document and a successful review of the work by the Thesis Committee at the end of the Spring Quarter.

General Curriculum and Unit Requirements

One of four emphasis must be indicated: Painting, Sculpture, Ceramics, or Printmaking. A *minimum* of 54 quarter units is required, half of which (27 units) must be studio courses in the 500 Independent Study series. In this way the tutorial form typifying the program is established. Twelve units of art history courses (upper division 100 series courses are accepted and may be taken P/NP) are required. Twelve units must be taken in the 240 seminar series. A maximum of 18 units in addition to the required 54 may be taken to complete the MFA degree. It is expected that all graduate students complete 4-5 hours of work per week for each unit of credit. Two years of residency are required.

Career opportunities

Art Studio majors: The major in art is pre-professional training for careers in teaching or as practicing artists in the Fine Arts.

Teaching credentials

Students who complete a bachelor's degree with a major in art, with emphasis on the practice of art, may be eligible to pursue a single subject California teaching credential. The state of California requires that credential candidates demonstrate their subject matter competency in this teaching area. Subject matter competency can be established by completing a State approved program. (An approved program consists of selected course work included in the degree program.) Further, as part of the admission procedures to the Single Subject Credential Program in Art at UCSB an applicant may be required to attend an interview and present a portfolio.

A pre-professional volunteer program is available through the Art Department to art majors interested in gaining tutorial and teaching assistance experiences in a local school district prior to student teaching. Students are advised to consult the Departmental Credential Adviser, or advisers in the Graduate School of Education.

Admission to the credential program in Art also requires certain prerequisites. The chart below identifies these requirements.

¹ The portfolio, which is sent directly to the Art department, will consist of 12-20 slides related to the area of specialization and a typed 8 1/2—x11—information sheet describing the size, material and date of execution of the work. The applicant's name, an identification number and arrow indicating "UP" should be inscribed on each slide mount. Portfolios will be returned soon after April 15.

	English 106	Ergonomics 109	Pre-Professional Experience
Single Subject Program	X	X	optional

Correspondence information

Department of Art, Art Building, Rm 1316, University of California, Santa Barbara, California 93106.
Phone: (805) 961-3138.

Art Studio

Yearly schedule varies. Students should check with department one quarter in advance about pre-enrollment schedule. A maximum of 3 studio courses may be taken per quarter.

Lower Division courses

The department recommends the 5A,B,C series be taken at the Freshman level. Courses 10, 12, 14, 16, 18 and 19 series may be repeated for credit up to six units. Department requires a repeat from a different instructor. Exceptions require instructor's permission.

Freshmen Seminars

To be offered on an irregular basis. For additional information see Department.

5A • Visual Fundamentals (3) Staff

Two-dimensional fundamentals of composition, form and proportion. Introduction to drawing and space including line, tone, volume, perspective, surface and texture. Basic exposure to materials and techniques.

5B • Visual Fundamentals (3) Staff

Fundamentals of color theory including hue, value, intensity and temperature. The relationship of color to form and space will be explored. Basic exposure to materials and techniques.

5C • Visual Fundamentals (3) Staff

Three-dimensional fundamentals of open and closed space, surface manipulation of simple forms, and basic exposure to materials and techniques.

Note: Art 5A,B,C do not have to be taken in sequence.

10 • Lower Division Painting (3) Staff

Recommend taking 5B.

Introductory problems in various painting media such as watercolor, acrylic and oils. Fundamentals of color theory and composition. Techniques on various supports, grounds and paint application.

12 • Lower Division Sculpture (3) Thomas, Real

An introduction to sculptural problems and techniques dealing with traditional spatial concepts. Emphasis will be on a variety of sculptural materials used to realize these concepts.

14 • Lower Division Printmaking (3) Cortright, McCurdy, Ross

Recommend taking 5A.

Introduction to printmaking, emphasis on technical fundamentals and conceptual aspects of graphic arts. Processes of intaglio and lithographic and screen printing will be emphasized.

16 • Lower Division Ceramics (3) Arntz, Kaganoff, Pierson

Introduction to clay as a medium with emphasis on form. Lectures on clays, clay bodies, glazes and a general survey of ceramics history.

Techniques of throwing, handbuilding, glazing and firing will be covered.

18 • Lower Division Drawing (3) Staff

Recommend taking 5A.

Introductory problems in two-dimensional representation with various drawing media, including structural and symbolic implications of the human form. Emphasis on organization of vision and thought in terms of drawing techniques and materials.

19 • Lower Division Photography (3) Staff

Exploration of photography as a means of artistic expression and showing its relationship to other art media. To be offered on an irregular basis.

Upper Division courses

The specific concepts, techniques and philosophy of teaching in courses 100 through 120 will vary according to the individual instructor. A syllabus of each instructor's courses will be available in the Art Department Office. Courses 100, 101, 105, 106, 110, 111, 115, 119 and 120 may be repeated for credit.

100 • Upper Division Painting (4) Staff

Prerequisite: 3 units of Art 10. Designed for majors.

Problems emphasizing development of personal expression in painting in various media. Consideration given to historical painting as well as trends of contemporary painting. The relationship of drawing to painting will be considered. No cumulative limit. May be repeated more than once in a quarter, but must be from a different instructor.

101 • Special Studies in Painting (4) Staff

Prerequisite: At least 1 quarter of Art 100 and consent of instructor.

Special studies in painting utilizing particular faculty interests and/or special departmental facilities.

105 • Upper Division Sculpture (4) Thomas

Prerequisite: 3 units of Art 12.

First year: more complex spatial problems: working with a limited number of sculptural materials with emphasis on competency in handling two of these materials.

Second year: advanced work in sculptural media; concentration on development of personal sculptural ideas.

May be repeated more than once in a quarter, but must be from a different instructor.

106 • Special Studies in Sculpture (4) Thomas

Prerequisites: At least one quarter of Art 105 and consent of instructor. Designed for majors.

Special studies in sculpture utilizes particular faculty interest and/or special departmental facilities. This course will add variety to upper division curriculum and encourage innovative teaching. Examples of possible Art 106 courses in sculpture would include a course in bronze casting utilizing our new foundry facility, a course in environmental sculpture, etc.

110 • Upper Division Printmaking (4) Cortright, McCurdy

Prerequisite: 3 units of Art 14.

Problems in printmaking including advanced technical processes and color in intaglio and lithographic printing. Emphasis on developing individual competency, both technically and conceptually, through assigned projects and supervised independent study. May be repeated more than once in a quarter, but must be from a different instructor.

111 • Special Studies in Printmaking (4) Cortright, McCurdy

Prerequisites: At least 1 quarter of Art 110 and consent of instructor. Designed for majors.

Advanced level course dealing with a specific faculty interest or special departmental facility in the printmaking area.

115 • Upper Division Ceramics (4) Arntz, Kaganoff, Pierson

Prerequisite: 3 units of Art 16.

Investigation at an individual level of raku, low fire, salt and high fire range. Lectures and problems relating to technical aspects of ceramic chemistry. Personal control of form from clay body, fabrication, glazing, to and including firing. May be repeated more than once in a quarter, but must be from a different instructor.

116 • Special Studies in Ceramics (4) Arntz, Kaganoff, Pierson

Prerequisites: At least 1 quarter of Art 115 and consent of instructor. Designed for majors.

Advanced level course dealing with a specific faculty interest or a special departmental facility in the ceramics area.

118 • Upper Division Drawing (4) Staff

Prerequisite: 3 units of Art 18. Designed for majors.

Problems emphasizing development of personal expression in drawing, utilizing various media. Consideration given to historical as well as contemporary trends of drawing. May be repeated more than once in a quarter, but must be from a different instructor.

119 • Media for Visual Communication (4) Smith

Prerequisite: consent of instructor.

A laboratory course stressing experimentation, creation and use of multi-image projection materials. May be repeated for credit.

120 • Upper Division Photography (4) Staff

Prerequisite: None.

Exploring photography as artistic expression and its relationship to other art media. May be repeated for credit. To be offered on an irregular basis.

194 • Special Group Studies (2-4) Staff

Prerequisites: Qualified UD students and consent of instructor and chairman of department.

A means of making special studies or meeting special curricular problems. No more than 4 units per quarter and 12 units total may be taken "in lieu" of major requirements. Limited to groups of 3-12 persons.

199 • Independent Studies (1-5) Staff

Prerequisites: Consent of instructor and previous completion of 84 units.

Advanced individual problems. 199 courses are limited to no more than 5 units in one quarter and no more than 30 units total.

240A • Graduate Seminar in Art Education (4) Smith

Prerequisites: Graduate Standing and consent of instructor.

A means of making special studies and meeting special curricular problems.

240C • Graduate Seminar in Ceramics (4) Arntz, Kaganoff, Pierson.

Prerequisites: Graduate standing and consent of instructor.

Special problems in ceramics.

240D • Graduate Seminar In Drawing (4) Staff

Prerequisites: Graduate standing and consent of instructor.

Problems in drawing and various media.

240P • Graduate Seminar In Painting (4) Staff

Prerequisites: Graduate Standing and consent of instructor.

Group discussion and criticism with emphasis on original works. Topics of a contemporary and historical nature will be introduced.

240PM • Graduate Seminar In Printmaking (4) Cortright, McCurdy

Prerequisites: Graduate standing and consent of instructor.

Special problems in printmaking expression and techniques.

240S • Graduate Seminar in Sculpture (4) Thomas

Prerequisites: Graduate standing and consent of instructor.

Problems in various sculptural media.

244 • All Faculty Seminar (4) Staff

Prerequisites: First year Graduate Standing.

Designed to acquaint new MFA students with the ideas and work of the studio faculty. Includes studio visits, lectures, and slide presentations.

245 • Studio Graduate Seminar (4) Staff
Prerequisites: Graduate standing and consent of instructor.

A general seminar for studio graduate students. Content will vary depending on instructor.

246 • Professionalism (4) Staff

Prerequisites: Graduate Standing and consent of instructor.

Seminar will address problems of professionalism and survival for graduating MFA students. Portfolios, resumes, museums, galleries, alternative spaces, sales and commission policies, studio spaces, art world politics, taxes, etc, will be discussed by faculty and guest speakers.

290 • Seminar In Curriculum of Instructional Procedures and Materials used In the Teaching of Art in the Schools (4) Smith

Prerequisites: Graduate Standing and consent of instructor.

Reading and discussion on the knowledge and understanding of art teaching with emphasis on the application of techniques learned.

293 • Problem Seminar In the Teaching of Art and Special Education (2) Smith

Prerequisites: Graduate Standing or consent of instructor.

In-depth discussions of problems and solutions in teaching art in the schools including laboratory experiences under public law #94-142.

295 • Seminar in Art Methods for the Elementary School (3) Smith

Prerequisites: Graduate Standing and consent of instructor.

Procedures used in the teaching of art in the Elementary School, including the integration of art and humanities.

591A • Directed Study in Visual Arts Education (2-9) Smith

Prerequisites: Consent of instructor and Graduate standing.

Individual Tutorial.

591C • Directed Study for the MFA In Ceramics (2-9) Arntz, Kaganoff, Pierson

Prerequisites: Graduate standing; consent of instructor.

Individual Tutorial.

591DP • Directed Study for the MFA In Drawing and/or Painting (2-9) Studio Faculty

Prerequisites: Graduate standing; consent of instructor.

Individual Tutorial.

591PM • Directed Study for the MFA In Printmaking (2-9) Cortright, McCurdy

Prerequisites: Graduate standing; consent of instructor.

Individual Tutorial.

591S • Directed Study for the MFA In Sculpture (2-9) Thomas

Prerequisites: Graduate standing; consent of instructor.

Individual Tutorial.

594 • Special Studies In Studio Art (4) Studio Faculty

Prerequisites: Consent of instructor; Graduate standing, consent of graduate adviser.

A means of making special studies and meeting special curricular problems.

Credential Program**392 • Student Teaching: Art (1-12) Smith**

Prerequisites: Graduate Standing and the completion of/or concurrent and enrollment in Art 290.

Field supervised art teaching as a single subject at selected grade levels.

Asian American Studies

Advisory Committee

(See appropriate departmental listings for faculty information.)

Robert H. Billigmeier, Ph.D., *Professor of Sociology.*

Haruhiro Fukui, Ph.D., *Professor of Political Science.*

Immanuel C. Y. Hsu, Ph.D., *Professor of History.*

Victor Nee, Ph.D., *Assistant Professor of Sociology (Chairperson).*

Hallam C. Shorrock, Jr., M. Div., B.A., *Visiting Lecturer in Eastern Languages.*

Concerns of the program

The Asian American Studies Program (1) provides all students with the opportunity to study the unique role of Asian people in contemporary America; (2) offers courses which fulfill the American History and Institutions requirement which also may be applied to the E-2 area of the General Education requirements for the B.A. and for the B.S. degrees.

It is the purpose of the program of Asian American Studies to provide an understanding of the Asian American experience. The goal is threefold; first, to offer the Asian American students an opportunity to study and understand their heritage and history as an ethnic minority; second, to offer other students an opportunity to enrich their knowledge of the Asian American; and third, to encourage the

continual gathering, development, and study of new knowledge regarding Asians in America.

Teaching credentials

Students who desire special expertise in the field of Asian American Studies may elect the following program in addition to the major they have selected in a teaching field. (See the *Announcement of the Graduate School of Education* for details.)

Requirements for this background in Asian American Studies specify a minimum of 30 units with Asian American Studies 100A, 100B, 110 and 199 required. Selection of additional courses to complete this program should be made from the two categories listed below in consultation with a faculty adviser in Asian American Studies.

American History and Society: At least two courses selected from History 177, 17A, 17B, Political Science 172, Sociology 45, 128, Black Studies 120.

Asian History and Culture: At least two courses selected from History 185A, 185B, 187A, 187B, Anthropology 145, Religious Studies 164A, 164B, 166, 167A, 167B, Art 6D, Chinese 112, 140, Japanese 112, 140.

Correspondence Information

Asian American Studies Program, University of California, Santa Barbara, California 93106.

Asian American Studies Upper Division courses

100A • Asian American Experience (4) [E2]

An introduction to the experience of being an Asian in America. Special focus upon historical and sociological analysis of the origins of the Asians in America since 1840.

100B • Contemporary Asian American Experience (4) [E2]

The aim of this course is to present the Asian American experience with emphasis from 1945 to the present. The focus is upon contemporary

issues, problems, progress, analysis of situations and possible solutions or outcomes centering around key ideas relating to the Asians in America

110 • Asian American Communities: Comparative Analysis (4) [E2]

A comparative analysis of the Chinese, Filipino, and Japanese communities in the United States. The course will include as topics: origins, patterns of settlement, social structure, social organization, leadership patterns and inter-ethnic relationships.

146 • Special Topics in Asian American Studies (4) [E2]

Lectures in special areas of interest in Asian

American studies. Specific course titles and content to be announced by the department when offered. Course may be repeated up to a 16 unit maximum.

*199 • Independent Studies in Asian American Studies (1-5)

Prerequisites: Upper Division standing and consent of instructor.

To provide special guidance for exceptional advanced students in formulation and execution of independent projects and in writing and presenting the results.

*See N-2 for 198/199 independent studies unit limitations.

Asian Studies

Program Advisory Committee

(See departmental entries for faculty information.)

*Robert L. Backus, Ph.D., *Associate Professor of Eastern Languages.*

Donald E. Brown, Ph.D., *Professor of Anthropology.*

*Chi-yun Chen, Ph.D., *Professor of History.*

³Herbert Fingarette, Ph.D., *Professor of Philosophy.*

Wilbur M. Fridell, Ph.D., *Associate Professor of Religious Studies.*

¹Haruhiro Fukui, Ph.D., *Professor of Political Science.*

*Robert M. Gimello, Ph.D., *Associate Professor of Religious Studies.*

Chauncey S. Goodrich, Ph.D., *Professor of Eastern Languages.*

Thomas G. Harding, Ph.D., *Professor of Anthropology.*

Stephen N. Hay, Ph.D., *Associate Professor of History.*

³Immanuel C. Y. Hsu, Ph.D., *Professor of History.*

Robert A. Huttenback, Ph.D., *Professor of History.*

Nandini Iyer, M.A., *Visiting Lecturer in Religious Studies.*

*Gerald J. Larson, Ph.D., *Professor of Religious Studies.*

²Alan P. L. Liu, Ph.D., *Professor of Political Science.*

Mattison Mines, Ph.D., *Associate Professor of Anthropology.*

Keiko Mochizuki, B.A., *Lecturer in Eastern Languages.*

³Prudence R. Myer, Ph.D., *Associate Professor of Art.*

⁴Victor Nee, Ph.D., *Assistant Professor of Sociology.*

Kenneth H. Pai, M.F.A., *Associate Professor of Eastern Languages.*

⁴Raimundo Panikkar, D.Sc., Ph.D., Th.D., *Professor of Religious Studies.*

Hallam C. Shorrock, Jr., M.Div., B.A., *Visiting Lecturer in Eastern Languages.*

Henry D. Smith II, Ph.D., *Associate Professor of History.*

³ ⁴Kuo Ch'ing Tu, Ph.D., *Assistant Professor of Eastern Languages.*

Concerns of the program

Asian Studies is an interdepartmental program which permits the student to study an Asian area (China, Japan, or India) through two or more academic disciplines, while at the same time requiring at least two years of training in a language relevant to the area of study. The disciplines which contribute the most to Asian Studies are Art History, Anthropology, Eastern Languages, History, Philosophy, Political Science, and Religious Studies, while the languages which may be taken in conjunction with Asian Studies courses are Chinese (Mandarin and Classical), Japanese, and Sanskrit. Asian Studies consists of an undergraduate major leading to the B.A. and a graduate

program that goes as far as the M.A. Both the major and the graduate program are designed to enable the student to study an Asian area more intensively (through two disciplines) or more extensively (through more than two disciplines) as desired, and to get a good start in a language relating to the area of interest.

Departmental Advising

The Chairperson of the Program serves also as undergraduate and graduate adviser.

Bachelor of Arts

Preparation for the major

In preparation for the major, students must have at least two years (24 units) of an Asian language pertaining to the area of their interest (or else demonstrate an equivalent level of competence), and in addition must take at least eight units of lower division work selected from the following:

Anthropology

- 2 • Introductory Cultural Anthropology
- 3 • Introductory Archaeology
- 5 • Introductory Physical Anthropology

Art History

- 6D • Survey-Asian Art

Eastern Languages

- 30 • An Introduction to the Writing Systems of East Asia.

Economics

- 1 • Principles of Economics-Micro
- 2 • Principles of Economics-Macro

Geography

- 2 • Introduction to Human Geography

History

- 19 • The Rise of the Peoples Republic of China
- 86 • China's Cultural Tradition
- 88 • The Samurai Tradition in Japanese History
- 90 • Japanese History through Art and Literature

*Member of Committee on Asian Studies

¹Absent on Leave Fall 1978

²Absent on Leave Fall and Winter 1978-79

³Absent on Leave Spring 1997

⁴Absent on Leave 1978-79

Japanese

32 • Introduction to Japan

Philosophy

2 • Introduction to Oriental and Eastern Philosophies

Religious Studies

3 • Introduction to Asian Religion

Sociology

1 • Social Organization

Upper Division major

The major consists of forty units of upper division courses selected from two or more disciplines and generally concentrating on one of the three areas of Asian Studies: China, Japan, or India. It is advisable that one of the disciplines be history; and, in any case, all majors are required to take four units of Asian history chosen from either the lower or upper division list. Courses for the major may be taken from the following:

Anthropology

- 103 • Peoples and Cultures of Asia
- 136 • Peoples and Cultures of the Pacific
- 142 • Peoples and Cultures of India
- 144 • Peoples and Cultures of Southeast Asia
- 145 • Far Eastern Societies
- 146 • China in Transition
- 172 • Colonialism: Social Effects

Art History

- 151C • Arts of the South Seas
- 181 • The Art of India
- 182A • Early Chinese Art
- 182B • Later Chinese Art
- 183 • The Art of Japan
- 183B • Japanese Painting

Asian American Studies

- 100A • Asian American Experience
- 100B • The Contemporary Asian American Experience
- 146 • Special Topics in Asian American Studies

Chinese

- 101A—B—C • Elementary Classical Chinese
- 110A—B • Survey of Classical Chinese Literature
- 111 • The Traditional Chinese Short Story
- 112 • Survey of Modern Chinese Literature

120A—B • Readings in Modern Social and Political Writings

122A—B—C • Advanced Modern Chinese

124A—B • Readings in Modern Chinese Literature

130A—B—C • Intermediate Classical Chinese

131 • Selections from Classical Poetry

132 • Selections from Classical Poetry

140 • Topics in Chinese Culture

198 • Readings in Chinese

*199 • Independent Studies in Chinese

Economics

114 • Economic Development

Film Studies

120 • Styles of Japanese Cinema

History

104 • Eight Great Minds in World History

141H • British Imperial History

180 • Southeast Asian History

183 • Gandhi and Modern India

184A—B—C • China's Major Dynasties

185A • Modern China from 1600 to 1900

185B • Modern China from 1900 to Date

186A • History of China: Ancient China, to A.D. 200

186B • History of China: Medieval China, A.D. 200-1000

186C • History of China: Early Modern China, A.D. 1000-1600

187A • Traditional Japan

187B • Modern Japan

188Q • Pearl Harbor: The Japanese-American Confrontation in the 30's and 40's

189Q • The City in East Asian Perspective

190A • China's Social and Institutional History

190B • Problems in Chinese History

190C • History of Chinese Thought

195AS • The Methods of History (Asia)

Japanese

101 • The Structure of Classical Japanese

105A—B—C • Composition and Conversation

110A—B • Survey of Pre-Modern Japanese Literature

112 • Survey of Modern Japanese Literature

120A—B—C • Readings in Modern Japanese

124 • Readings in Modern Japanese Literature

130 • Readings in Classical Japanese

140 • Topics in Japanese Culture

198 • Readings in Japanese

*199 • Independent Studies in Japanese

*See N-2 for 198 / 199 independent studies unit limitations.

Linguistics

- 120A—B • Historical-Comparative Linguistics
(Sino-Tibetan)

Philosophy

- 122 • Philosophies of India
123A—B • Classical Chinese Philosophy

Political Science

- 126 • International Relations of East Asia
131 • China in World Affairs
134 • Nationalism and Communism in East Asia
135 • Government and Politics of Japan
136 • Government and Politics of China
137 • Governments and Politics in South Asia

Religious Studies

- 155 • Religion and the Impact of Vietnam
158 • Religion and Hindu Iconography
159A—B—C—D—E—F—G—H—I—J—K—L •
Religious Literature in Sanskrit
160 • Religious Systems of India
161A • Yoga Traditions of India
161B • Buddhist Meditation Traditions
162A • Indian Philosophy and Religion
162B • Seminar on Shankara and Nagarjuna
163A • Aum in the Upanishads
164A—B • The Buddhist Tradition
164C • Japanese Buddhist Founders and
Movements
165 • The Upanisadic Tradition of India
166A • Religion in Chinese Culture
166B • Taoist Traditions of China
166C • Confucian Traditions: The Classical Period
166D • Confucian Traditions: "Neo-Confucianism"
166E • The Flowering of Chinese Buddhism
166F • Religious Literature in Chinese: Buddhist
Texts
166G • Religious Literature in Chinese: Confucian
Texts
166H • Religious Literature in Chinese: Taoist
Texts
167A—B • Religion in Japanese Culture
167C • Japanese New Religions
168 • Nature: East Asian Views
169 • Zen

Sociology

- 161 • Sociology of the People's Republic of China

Master of Arts

Admission Requirements and Prerequisites

Students applying for admission to the M.A. program must meet the general requirements for admission to graduate standing. Applicants must submit a letter to the Chairperson of the Advisory Committee on Asian Studies describing their preparation for the work in the program and stating the objective they hope to attain by completing the program. Preparation may include an undergraduate degree in a relevant discipline as well as courses dealing with Asia. Moreover, some training in an Asian language is recommended. On the basis of this letter the Committee will decide whether applicants are eligible for the program and whether an interdisciplinary program is best suited to their needs.

Inquiries regarding admission to the M.A. program in Asian Studies should be sent to Chairperson, Advisory Committee on Asian Studies, or Graduate Division, University of California, Santa Barbara, 93106.

Degree Requirements

Students admitted to the M.A. program may pursue the degree under Plan I or Plan II of the Graduate Division of the University of California, Santa Barbara.

Plan I — Students must complete thirty units of upper division and graduate work, fulfill the language requirement, and write a thesis. The thirty units include not less than twelve units of graduate work taken in at least two departments.

Courses in one Asian language pertaining to the region of the student's interest must be taken in each quarter (4 units a quarter) until the required units of regular coursework are completed. But in no case will less than twenty-four units of one language (including lower division units) be accepted as fulfilling the language requirement. Upper division language units may be counted up to eight units toward completion of the required units of regular coursework. The language requirement will be waived for a student who comes into the program with sufficient competence in an Asian language to enable its use in regular course work, and will be considered fulfilled at any stage in the program at which the student achieves such competence.

Students will be allowed to choose Plan I only if they are capable of doing some thesis research in an Asian language pertaining to the region of their interest.

The student may choose a thesis adviser, but the finished thesis must be approved by a committee consisting of the thesis adviser and two additional faculty members appointed by the Chairperson of the Committee on Asian Studies.

Plan II — The student must complete thirty-six units of upper division and graduate work, fulfill the language requirement (same as Plan I), and pass a comprehensive examination. The thirty-six units include not less than eighteen units of graduate work taken in at least two departments.

Students who elect Plan II need not have mastered an Asian language to the level where it can be used for research, but must nevertheless demonstrate by at least a

"B" (3.0) average in the language courses that they can deal effectively with the structural and semantic problems of the language and are capable of pursuing this study individually in the future. Students must also demonstrate an ability to do research and to write intelligibly by submitting to the Committee on Asian Studies two term papers written for any graduate course. After approval by the Committee students will be permitted to go on to the comprehensive examination, where they will be required to prove both a factual and interpretive understanding of the region of their interest based on extensive reading. The comprehensive examination will be administered by an examination committee appointed by the Chairperson of the Committee on Asian Studies, and will cover the students' major course work.

In addition to the upper division courses in the major, graduate students may take courses from the following:

Anthropology

- 270B • Problems in Far Eastern Ethnology**
- 270C • Problems in Southeast Asian Ethnology**
- 270D • Problems in South Asian Ethnology**

Art

- 282 • Seminar in Oriental Art**

Chinese

- 596 • Directed Reading and Research**
- 598 • Master's Thesis Research and Preparation**

History

- 200AS • Historical Literature (Asia)**
- 201AS • Advanced Historical Literature (Asia)**
- 280 • Seminar in Modern China**
- 281 • Politics and Culture in the Gandhian Era**
- 284 • Seminar in the History of Chinese Thought**
- 285 • Seminar in United States Relations with the Far East**
- 286 • Seminar in Pre-Modern Chinese History**
- 288 • Seminar in Japanese History**

Japanese

- 596 • Directed Reading and Research**

598 • Master's Thesis Research and Preparation

Political Science

- 285 • Seminar in Chinese Politics**
- 286 • Seminar in Japanese Politics**
- 287 • Seminar in South Asian Studies**

Religious Studies

- 202 • Religious Literature in Pali**
- 203 • Religious Literature in Tibetan**
- 204 • Religious Literature in Vedic Sanskrit**
- 253 • History of Japanese Religion**
- 254 • Seminar on Vedic Scriptures**
- 255 • Seminar in Comparative Hindu-Buddhist Thought**
- 257 • Seminar in Buddhist Studies**
- 259 • Topics in East Asian Buddhist Thought**

Career opportunities

For students who intend to specialize in a discipline at the doctoral level, Asian Studies provides an opportunity for language training and interdisciplinary study of an Asian culture. For students who anticipate a career in business, law, journalism, government service, or secondary education, Asian Studies will lay the ground of a specialized knowledge useful in those professions. But it should be noted that additional training in a professional school is necessary to enter these fields.

Teaching credentials

Students who complete a major in Asian Studies may be eligible to pursue a California teaching credential. Specific details of State and University of California requirements for the UCSB credential program are available from the Graduate School of Education. (See inside front cover for address.)

Correspondence information

For information, write to Chairperson, Committee on Asian Studies, University of California, Santa Barbara, California 93106, or phone (805) 961-4065.

Biochemistry and Molecular Biology

(See appropriate departmental entries for faculty information)

Committee

Thomas C. Bruice, Ph.D., *Professor of Chemistry*.

John A. Carbon, Ph.D., *Professor of Biochemistry* (Director).

Ellis Englesberg, Ph.D., *Professor of Microbiology*.

Daniel Morse, Ph.D., *Professor of Genetics*.

Daniel L. Purich, Ph.D., *Associate Professor of Chemistry*.

Leslie Wilson, Ph.D., *Professor of Biochemistry* (Co-Director).

Concerns of the program

The interdepartmental graduate program in Biochemistry and Molecular Biology was initiated in 1974-75 and offers studies leading to the Doctor of Philosophy degree. The program is administered jointly by the Departments of Biological Sciences and Chemistry on the premise that, while the subject matter of biochemistry and molecular biology is quite diverse, there exists a common core of knowledge in the field. The emphasis of the program is on the understanding of biological phenomena at the molecular level. However, the program attempts to be hospitable to students with a diversity of backgrounds and career goals and allows for undergraduate preparation of either a chemical or biological orientation. Highly individualized programs of instruction can be undertaken by a student enrolled in the program after consultation with and approval by the Program Committee; about twenty faculty members from the sponsoring departments are available to direct approved research projects under the auspices of the program. Ph.D. candidates in the program must be registered as full time students in either the Department of Biological Sciences or the Department of Chemistry.

It should be noted that the Department of Biological Sciences offers a separate graduate program in this area which emphasizes the molecular biology aspects of the field. Moreover, graduate work in the Department of Chemistry which emphasizes bioorganic, biological and biophysical chemistry is available. Consult the descriptions of these two departments for details.

Doctor of Philosophy

Admission Requirements and Prerequisites

In addition to fulfilling the general requirements for admission to graduate status, the applicant will normally hold a bachelor's degree in chemistry, biochemistry, or another biological science. Undergraduate preparation should include the equivalent of the following courses offered at UCSB:

Chemistry **1A—B—C • General Chemistry** (12)

Chemistry **130A—B—C • Organic Chemistry** (9)

Chemistry **6A—B—C • Organic Chemistry Laboratory** (6)

Chemistry **113A—B—C • Physical Chemistry** (9)

Biology **130A • General Genetics** (4)

Biology **108A—B—C • General Biochemistry** (12)

Mathematics **3A—B—C** (12) followed by a fourth quarter of mathematics (differential equations recommended).

Physics **6A—AL—B—BL—C—CL** or Physics **8A—AL—B—BL—C—CL** (12-15)

Applicants with strong undergraduate records but lacking some of the preparation indicated above may be admitted with the condition that said deficiencies be removed early during their graduate career.

Degree Requirements

The student may emphasize either biochemistry or molecular biology but the common core of courses listed below must be completed by all students in the program. A complete program of courses will be arranged for each student on an individual basis in consultation with the Program Committee and will include additional courses from the Departments of Chemistry and Biological Sciences.

Common Core:

Biology **255C** (same as Chem 255C) • **Physical Biochemistry of Macromolecules** (3) Lee and Staff Introduction to biophysical chemistry. Theory and practice of physical methods employed to study macromolecules, emphasizing hydrodynamic methods.

Chemistry **261A • Enzyme Mechanisms** (3) Bruice, Parsons

The chemistry, structure and function of enzymes including discussion of pertinent organic model systems.

Biology **226 • Genetic Regulation: Advanced Systems** (2) Morse and Staff

Current status of advanced systems for the genetic dissection of mechanisms of gene regulation in the procaryotes and their viruses.

Chemistry **142B • Chemical Aspects of Biological Systems** (3) Staff

Chemical aspects of intermediary metabolism; chemistry of anabolic and catabolic pathways for nucleic acids, proteins, and cofactors. (An appropriate graduate level course in Biochemistry may be substituted for Chem. 142B, upon approval of the Director.)

Biology **260 • Research Seminar in Biochemistry/Molecular Biology**

A regularly scheduled series of seminars in biochemistry and molecular biology; all students are required to attend as soon as they enter the program.

Biology **262 • Literature in Molecular Biology** (1)

A weekly seminar in which recent papers from the scientific literature on molecular and cellular biology are discussed. All students are required to attend during the fall, winter, and spring quarters.

Students must pass a first qualifying exam, consisting of an oral research proposition to be taken at the beginning of the 2nd year, and a second qualifying exam, consisting of (a) a comprehensive written exam or a research proposition, and (b) an oral exam immediately following, to be taken at the beginning of the 3rd year of study. Topics for the research propositions and/or comprehensive exams are to be selected from 3 of the areas listed below, such that at least 2 area groups are represented; appropriate areas of study offered by sections of the Department of Biological Sciences or other departments may be substituted for one of the above area groups with the approval of the Program Committee. The candidate must demonstrate a reading knowledge of the scientific literature in one of the following languages: German, Russian or French.

Area Group A Macromolecular structure: proteins, nucleic acids and polysaccharides.

Area Group B 1. Bioorganic chemistry and models of enzyme action. 2. General metabolism and metabolic control. 3. Enzymology.

Area Group C 1. Molecular basis of genetics. 2. Gene regulation.

Students will be expected to begin research for the doctoral dissertation early in their graduate careers; research directors may be selected from appropriate faculty in the

Department of Biological Sciences or Department of Chemistry with approval of the Program Committee. Research areas currently under active investigation on campus include the following:

- Bioorganic Chemistry of Enzymes and Coenzymes;
- Chemistry and Biology of Nucleic Acids;
- Microbial Genetics and Regulation of Gene Action;
- Magnetic Resonance Studies of Biological Systems;
- Protein Physical Chemistry;
- Macromolecular Interactions and Conformation;
- Nuclear-cytoplasmic Relationships;
- Developmental Biochemistry;
- Chemical Properties of Membranes;
- Human Cell Genetics;
- Gene Expression and Genetic Dissection in Tetrahymena;
- Chemical and Physical Properties of Regulatory Enzymes;
- Kinetics and Regulation of Enzymes;
- Enzyme Interconversion by Covalent Modification;
- Cell Physiology and Development; Biological Rhythms in Algae;
- Mechanisms of Cellular Differentiation;
- Virology; Mechanisms of Interferon Action;
- Oncogenic Viruses, (SV40) and Cytopathogenic Viruses (REO);
- Synthetic Recombinants and Gene Transfer.
- Mechanisms of Cell Division

Biological Sciences

Professors

Daniel B. Botkin, Ph.D., *Rutgers; ecology.*

John A. Carbon, Ph.D., *Northwestern University; biochemistry.*

James F. Case, Ph.D., *Johns Hopkins University; neurobiology.*

¹ ²Joseph H. Connell, Ph.D., *Glasgow; population ecology.*

James Crunshaw, D.Sc., Ph.D., *Leeds; cell biology.*

John E. Cushing, Ph.D., *California Institute of Technology; immunology.*

¹ Alfred W. Ebeling, Ph.D., *UC Los Angeles and Scripps Institution of Oceanography; zoology.*

Ellis Englesberg, Ph.D., *UC Berkeley; microbiology, genetics.*

Aharon Gibor, Ph.D., *Stanford University; cell biology.*

Robert W. Holmes, Ph.D., *Oslo; Marine botany and biological oceanography.*

W. N. Holmes, D.Sc., Ph.D., *Liverpool; zoology.*

Jack L. King, Ph.D., *UC Berkeley; genetics.*

¹ ²Philip C. Laris, Ph.D., *Princeton University; cell physiology.*

Nancy L. Lee, Ph.D., *University of Pittsburgh; molecular biology, biochemistry.*

Daniel Morse, Ph.D., *Albert Einstein College of Medicine; molecular biology, genetics and biochemistry; marine biology.*

Maynard F. Moseley, Ph.D., *University of Illinois; plant anatomy.*

Walter H. Muller, Ph.D., *Cornell University; plant physiology.*

William W. Murdoch, D.Phil., *Oxford; population ecology.*

Michael Neushul, Jr., Ph.D., *UC Los Angeles; marine phycology.*

Eduardo Orias, Ph.D., *University of Michigan; genetics.*

Ian K. Ross, Ph.D., *McGill University; cell biology, mycology.*

Dale M. Smith, Ph.D., *Indiana University, systematic botany (Chairperson).*

² ³Beatrice M. Sweeney, Ph.D., *Radcliffe College; algal physiology.*

George Taborsky, Ph.D., *Yale University, biochemistry.*

Edward L. Triplett, Ph.D., *Stanford University; biology.*

James L. Walters, Ph.D., *UC Berkeley; biology.*

Adrian M. Wenner, Ph.D., *University of Michigan; natural history of arthropods.*

Leslie Wilson, Ph.D., *Tufts University; biochemical pharmacology.*



James W. Valentine, Ph.D., *UC Los Angeles; paleobiology, biogeology.*

Associate Professors

- James J. Childress, Ph.D., *Stanford University; ecological physiology.*
 Steven K. Fisher, Ph.D., *Purdue University; neurobiology. National Institutes of Health Career Development Awardee.*
 John R. Haller, Ph.D., *UC Los Angeles; systematic botany, biogeography.*
 Robert S. Jacobs, Ph.D., *Loyola University; pharmacology.*
 Allan Stewart-Oaten, Ph.D., *Michigan State University; mathematical biology, statistics.*
 Stephen I. Rothstein, Ph.D., *Yale University; evolutionary biology, ecology, ethology.*
 Charles E. Samuel, Ph.D., *UC Berkeley; virology, biochemistry. National Institutes of Health Career Development Awardee.*
 Robert K. Trench, Ph.D., *UC Los Angeles; marine biology.*

Assistant Professors

- Alice L. Alldredge, Ph.D., *UC Davis; marine biology.*
 Peter M. Collins, Ph.D., *University of London; pharmacology.*
 Scott D. Cooper, Ph.D., *University of Wisconsin; aquatic ecology and limnology.*
 Sally J. Holbrook, Ph.D., *UC Berkeley; population ecology.*
 Armand M. Kuris, Ph.D., *UC Berkeley; parasitology, marine ecology.*
 Bruce E. Mahall, Ph.D., *UC Berkeley; plant ecology.*
 John M. Melack, Ph.D., *Duke University; zoology and limnology.*
 Barbara B. Prézélin, Ph.D., *Scripps Institute of Oceanography; marine biology.*
 Steven I. Reed, Ph.D., *Stanford University; biochemistry.*
 Duane Sears, Ph.D., *Columbia University; biochemistry.*
 Samuel S. Sweet, Ph.D., *UC Berkeley; vertebrate morphology.*
 Robert R. Warner, Ph.D., *Scripps Institute of Oceanography; marine ecology.*

Professors Emeriti

- Vernon I. Cheadle, Ph.D., *Harvard University.*
 Demorest Davenport, Ph.D., *Harvard University.*
 Barbara B. DeWolfe, Ph.D., *UC Berkeley.*
 Mary M. Erickson, Ph.D., *UC Berkeley.*
 Katherine Esau, Ph.D., *UC Berkeley.*
 Garrett Hardin, Ph.D., *Stanford University.*
 Steven M. Horvath, Ph.D., *Harvard University.*
 Cornelius H. Muller, Ph.D., *University of Illinois.*
 Henry I. Nakada, Ph.D., *Temple University.*
 Elmer R. Noble, Ph.D., *UC Berkeley.*

¹Absent on Leave Fall 1980

²Absent on Leave Winter 1981

³Absent on Leave Spring 1981

Concerns of the department

The Department of Biological Sciences (1) provides diverse opportunities for obtaining the Bachelor of Arts degree through eight departmental majors: Aquatic Biology, Biochemistry-Molecular Biology, Biological Sciences, Botany, Environmental Biology, Pharmacology, Physiology and Cell Biology, and Zoology; (2) offers graduate programs, leading to the degrees of Master of Arts and Doctor of Philosophy, with emphases in four areas: Aquatic and Population Biology, Biochemistry-Molecular Biology, Environmental and Evolutionary Biology, and Physiology and Cell Biology; and (3) cooperates with the Department of Chemistry in providing an interdepartmental alternative to departmental graduate programs in biochemistry and molecular biology. In addition, a wide range of courses is available to all undergraduates, for acquainting them with the concepts and methods of the biological sciences, and to all students, for elective enrollment or the support of their preparation for degrees in other departments or programs of the University.

Departmental Advising and Publications

In view of the diversity and wide range of the educational opportunities offered by the Department, it is considered particularly important that students seek advice freely when planning their academic programs. The Department Undergraduate Academic Advisor, located in the Departmental Administrative Offices, Bldg. 478, Rm. 1202 (phone: (805) 961-3052) is available for counseling daily from 10-12 and 1-5. Questions about courses, degree requirements, course substitutions, and petitions should be directed there. Students interested in certain specialized careers may also seek advice from designated members of the faculty who serve as career advisors. The Undergraduate Academic Advisor can direct students to these advisors.

Waivers of and substitutions for departmental requirements, including transfer credits, are subject to approval by the Chairperson of the Department. The Undergraduate Adviser of the Department will assist students in the preparation of the required petitions.

Four faculty members are appointed each year to serve as Graduate Advisers in the respective areas of emphasis mentioned above. In addition, a faculty member serves as the Graduate Adviser in the interdepartmental program in Biochemistry and Molecular Biology. These Graduate Advisers represent the Dean of the Graduate Division in the Department and help oversee and administer the graduate programs offered by the Department. They should be consulted on general academic or other matters related to graduate study. (Of course, students engaged in research normally depend also on their principal research adviser for academic and career advice.) The Graduate Secretary of the Department assists graduate students in all administrative matters related to their graduate study. It is important that new graduate students contact the Graduate Secretary immediately upon arrival and maintain such contact throughout their stay in the Department, since the Graduate Secretary is charged with maintenance of student

records and with responsibility for ensuring compliance with procedural rules applicable to graduate study.

From time to time, the Department publishes diverse leaflets and pamphlets dealing with the Department's instructional programs in general or special aspects of undergraduate or graduate studies (including financial aid) in particular. Such materials may be obtained from the Department's undergraduate and graduate secretaries respectively.

Bachelor of Arts

Basic Preparation for all majors The preparation for all eight majors includes **General Chemistry** (Chemistry 1A—B—C and labs), **Physics** (Physics 6A—B—C), and **Introductory Biology** (Biology 11A—B—C). In addition, although the various majors specify different individual courses, all require preparation in **Organic Chemistry** and **Mathematics**. For those students who have the option of electing Chemistry 8AB within their preparation for the major, the Department strongly recommends the completion of Chemistry 8C to those who anticipate further work in the field of biochemistry.

Students with a good high school background are urged to complete their basic preparation in chemistry and mathematics in their freshman year. Freshmen may also consider enrolling in a freshman seminar. In general, students are normally expected to complete all lower division course requirements by the end of their sophomore year.

Students with a weak mathematics background should make up this deficiency by completing Intermediate Algebra and Trigonometry by correspondence through the University Extension, preferably during the summer preceding enrollment in the university, or by completing Mathematics 1 or 1SX or 1SY and/or 2 or 2S at UCSB as necessary.

Further specific requirements or recommendations concerning the lower division program are presented under the several majors described below.

Common requirements for all majors As a requirement for graduation all students will be required to take the courses listed under Area A, and all students, except those who choose the Biochemistry-Molecular Biology and Pharmacology Majors, will be required to take at least one course* from Area B, and at least one course* from each of two of the three Areas C, D, and E. (* *The corresponding laboratory courses must be taken in all cases where it is indicated that concurrent enrollment in the laboratory is required.*) A maximum of 8 upper division (UD) units in related fields may be substituted in the UD program of a major only with the PRIOR written approval of the student's faculty adviser, followed by the endorsement of the Chairperson of the Department.

The five areas and elective courses within each follow:

Area	Pertinent Courses
A. Genetics	Biology 130A—B.
B. Physiology	Biology 101; 105; 134—134L; Botany 120—120L; Zoology 101—101L; 143—143L; 154.
C. Development	Biology 144; Botany 171; Zoology 100-100L.
D. Ecology	Biology 145B; 145C; Botany 140—140L; 141; 142; Zoology 113A—AL; 139; 140.

E. Diversity of Form and Structure Biology 104A; 122; 131; 141; 142—142L; 143; 145B; 147; 153; 154; 161; 173; Botany 103A—B; 110; 111; 151; 170; 176—176L; Zoology 105; 108; 111; 112A; 113B—BL; 122; 123; 125; 126; 130; 161.

Note: Any course listed in more than one category will satisfy only one category.

Specific courses to fulfill the requirements above and/or additional requirements follow under the various upper division majors.

The requirements for the Biochemistry-Molecular Biology and Pharmacology majors do not come under the common requirements listed here and are described separately below.

Aquatic Biology

This major provides students with interests in marine biology, biological oceanography, limnology, marine and freshwater ecology, and population biology of aquatic organisms an opportunity to gain a general background in this broad subject area. Opportunities for concentration in certain of these subjects are provided by a broad range of courses at the upper division level.

Preparation for the major: Biology 11A—B—C; Chemistry 1A—AL—B—BL—C—CL, 6A—B and either 8A—B or 130A—B—C; Physics 6A—AL—B—BL—C—CL; Mathematics, one of the following options:

(1) Mathematics 34A—B and either Mathematics 34C or Biology 136A (any or all of 34A—B may be met by completion of an equivalent number of units of Mathematics 34S).

(2) Mathematics 7A—B—C;

(3) Mathematics 3A—B—C (any or all of 3A—B—C can be met by completion of an equivalent number of units of Mathematics 3S). Most graduate schools prefer one year of calculus, option (3) above.

Upper Division major: 42 upper division units including:

I. Breadth requirements: at least one course from each of the following categories:

A. **Genetics:** Biology 130A—B.

B. **Development** OR **Biochemistry:** Zoology 100—100L OR Biology 118.

C. **Ecology:** Zoology 140.

D. **Physiology:** Biology 101, 105, 134—134L, or Botany 120—120L, or Zoology 101—101L, 143—143L, or 154.

II. Biology 145A—B—C and at least two courses from the following list (Biology 134—134L or Zoology 143—143L cannot be used to fulfill both this requirement and the Physiology requirement):

Biology 125, 134—134L, 142—142L, 147, 148, 151, 152, 153, 154

Botany 170, 171, 176—176L.

Zoology 105, 111, 112A, 121—122, 143—143L, 161.

Recommended Courses: Biology 40 is strongly recommended in the Sophomore year; Chemistry 113A—B—C and 150—150L, Biology 104A, 136B and a course in

physical geology (consult your advisor as different fields in aquatic biology have different needs).

Biochemistry-Molecular Biology

This major is designed to prepare students interested in gaining an understanding of the characteristics of the molecules and the molecular mechanisms involved in living systems. It is recommended especially for those planning graduate work in biochemistry, molecular biology or microbiology.

Preparation for the major: Biology 11A—B—C; Chemistry 1A—AL—B—BL—C—CL; 130A—B—C and 6A—B—C; Mathematics 7A—B—C or 3A—B—C (any or all of 3A—B—C may be met by completion of an equivalent number of units of Mathematics 3S); followed by a fourth quarter of mathematics (differential equations recommended). Physics 6A—AL—B—BL—C—CL.

Upper Division major: 38 upper division units including Genetics (Biology 130A—B), Biochemistry (Biology 108A—B—C and 109L), Physical Chemistry (Chemistry 113A—B—C) required, plus one additional upper division course in Biological Sciences to total at least 38 units distributed between Biology and Chemistry.

Biological Sciences

The purpose of this major is to give the student the flexibility to program the curriculum in Biological Sciences to meet chosen goals. Students in this major are encouraged to seek out faculty advisers in order to be sure to maximize their educational opportunities within this loosely structured major.

Preparation for the major: Biology 11A—B—C; Chemistry 1A—AL—B—BL—C—CL; 6A—B and either 8A—B or 130A—B—C; Mathematics 3A—B—C (any or all of 3A—B—C may be met by completion of an equivalent number of units of Mathematics 3S) or 7A—B—C or 34A—B—C (any or all of 34A—B, but not 34C, may be met by completion of an equivalent number of units of Mathematics 34S); Physics 6A—AL—B—BL—C—CL.

Upper Division major: a minimum of 38 Upper Division units in biological and related sciences so long as the "Common requirements for all majors" are met.

Botany

The Botany major is primarily designed to provide an understanding of plant structure and development, diversity, evolutionary relationships, functional systems, and environmental relationships.

Preparation for the major: Biology 11A—B—C; Chemistry 1A—AL—B—BL—C—CL; 6A—B and either 8A—B or 130A—B—C; Mathematics 3A—B and 34C (any or all of Mathematics 3A—B—C may be met by completion of an equivalent number of units of Mathematics 3S) or 7A—B—C or 34A—B—C (any or all of 34A—B, but not 34C, may be met by completion of an equivalent number of units of Mathematics 34S); Physics 6A—AL—B—BL—C—CL.

Upper Division major: Biology 130A—B; Botany 103A—B, 110 or 111 or 170, Botany 113, 120—120L, 140—140L or 141 or 142. It is recommended that Botany

103A—B be taken during the sophomore year and Botany 113 and 120—120L be taken as early as possible in the four year sequence.

Completion of these courses required for Botany majors will satisfy the departmental "Common requirements for all majors." The remaining units to fulfill the minimum requirements of 38 units in the upper division Biological Sciences should be determined in consultation with the student's faculty adviser.

The following courses are strongly recommended: Biology 104A, 107, 130C, 137. Other highly recommended subjects include Animal Diversity, Aquatic Biology, Biochemistry, Biometry, Geography, Geology, Mycology, Plant Taxonomy.

A specialization in Aquatic Botany is possible within the major in Botany by enrollment (*as electives*) in Botany 170, 171, 176—176L; Biology 145A—AL, 134—134L.

Environmental Biology

The Environmental Biology major is designed to provide the student with an understanding of the relationships of plants and animals with their physical environment and with each other, as shown at the individual, population, species or community level, as approached through the inter-related disciplines of behavior, ecology, morphology, physiology, systematics, and evolution. The location of the campus on the seashore and the close proximity of mountains and desert provide an unusual variety of habitats in which to work.

Preparation for the major: Biology 11A—B—C; Chemistry 1A—AL—B—BL—C—CL; 6A—B and either 8A—B or 130A—B—C; Mathematics 3A—B—C (any or all of 3A—B—C may be met by completion of an equivalent number of units of Mathematics 3S) or 7A—B—C or 34A—B—C (any or all of 34A—B, but not 34C, may be met by completion of an equivalent number of units of Mathematics 34S); Physics 6A—AL—B—BL—C—CL.

Additional units from Climatology, Physical Geography, Plant Geography, Geology, Paleontology or Oceanography, and statistics, either lower or upper division, are strongly recommended and should be determined in consultation with the student's faculty adviser.

Upper Division major: 38 upper division units are required, including: Botany 103A (Botany 103B recommended); Zoology 113A—AL, 124, and 125 plus an additional 25 units in Biological Sciences which shall include at least 8 units from Botany and 4 units from Zoology (in addition to the specifically required Botany and Zoology courses above) and at least one course or course sequence from each of the four categories (A—D) listed below. When a course or course sequence is listed in two of the categories (A—D), however, it should be understood that the course will satisfy only one category. The courses selected within these categories (A—D) will complete the "Common requirements for all majors"

A. Genetics: Biology 130A—B.

B. Physiology: Botany 120—120L; Zoology 143—143L, 154.

C. Ecology: Botany 140—140L, 141, 142; Zoology 140, 140AL—BL.

D. Natural History and Systematics: Biology 173; Botany 146, 151, 170; Zoology 105, 112A, 113B—BL, 122, 126, 130, 161.

Pharmacology

This major is intended for the student who is interested in a career involving studies of the site and mechanism of action of drugs used to treat diseases in humans. Pharmacology as a basic science is emphasized in contrast to therapeutic principles of pharmacology necessary in professional programs such as medicine, dentistry, veterinary medicine, nursing, and pharmacy.

The curriculum content is designed to prepare the student for careers in pharmaceutical research and development laboratories, drug safety laboratories, and in research laboratories of federal and state agencies and institutions. The program also provides a strong background for those students choosing to pursue graduate training.

Preparation for the major: Biology 11A—B—C; Chemistry 1A—AL—B—BL—C—CL, 130A—B—C (upper division credit) and 6A—B; Mathematics 3A—B—C (any or all of 3A—B—C may be met by completion of an equivalent number of units of Mathematics 3S) or 7A—B—C or 34A—B—C (any or all of 34A—B, but not 34C, may be met by completion of an equivalent number of Mathematics 34S); Physics 6A—AL—B—BL—C—CL.

Upper Division major: at least 38 upper division units including Genetics (Biology 130A—B), Biochemistry (Biology 108A—B—C and 109L), Basic Pharmacology (Biology 110A—B—C), Pharmacology laboratory (Biology 110BL—CL), and at least one of the following courses in Physiology: Biology 105 or Zoology 101—101L or 154. In addition, the following courses are recommended, and students should consult their faculty adviser concerning the advisability of each: Chemistry 105—150L; Biology 104A—B, 136A—B, 140; Zoology 108, 155.

Physiology and Cell Biology

This major is intended for the student primarily interested in the experimental analysis of the life processes of plant and animal organisms. It is considered to be a logical pathway leading to graduate studies in cell biology, development of form and function in plants and animals, and in the various subdisciplines of plant and animal physiology.

Preparation for the major: Biology 11A—B—C; Chemistry 1A—AL—B—BL—C—CL, 130A—B—C and 6A—B; Mathematics 3A—B—C (any or all of 3A—B—C may be met by completion of an equivalent number of units of Mathematics 3S), or 7A—B—C or 34A—B—C (any or all of 34A—B, but not 34C, may be met by completion of an equivalent number of units of Mathematics 34S); Physics 6A—AL—B—BL—C—CL.

Upper Division major: a minimum of 38 upper division units in the Biological Sciences including Biochemistry (Biology 108A—B—C and 109L) and Cell Biology (Biology 137), so long as the "*Common requirements for all majors*" are met.

Zoology

The Zoology major is primarily designed to provide an

understanding of animal structure and diversity, evolutionary relationships, functional systems, and environmental relationships with an option of specializations in either organismal or population biology.

Preparation for the major: Biology 11A—B—C; Chemistry 1A—AL—B—BL—C—CL, 6A—B and either 8A—B or 130A—B—C; Mathematics 3A—B—C (any or all of 3A—B—C may be met by completion of an equivalent number of units of Mathematics 3S), or 7A—B—C or 34A—B—C (any or all of 34A—B, but not 34C, may be met by completion of an equivalent number of units of Mathematics 34S); Physics 6A—AL—B—BL—C—CL.

Upper Division major: 38 upper division units in Biological Sciences which shall include at least one course or course sequence from Areas A and B, one from *either* Area C or Area D, and one from each of the two subsections of Area E below:

- A. Genetics:** Biology 130A—B.
- B. Physiology:** Zoology 101—101L, 143—143L, 154.
- C. Development:** Biology 144; Zoology 100—100L.
- D. Ecology:** Zoology 113A—AL, 140.
- E. Diversity and Systematics:** At least one course dealing with *vertebrates* and at least one dealing with invertebrates. *Invertebrates:* Zoology 111, 112A, 122, 125. *Vertebrates:* Zoology 105, 108, 113B—BL, 130, 161.

These courses satisfy the departmental "*Common requirements for all majors*." The remaining units to fulfill the minimum requirement of 38 units in upper division Biological Sciences should be determined in consultation with a faculty adviser. It is recommended that at least some of these additional upper division courses be chosen from Area E above and that at least one Botany course be taken.

Students most interested in various aspects of organismal and cellular biology (development, physiology, biochemistry) should take option C and should also consider a course in biochemistry, whereas those interested in population biology (ecology, evolution) should take option D and should also consider courses in field biology and population genetics.

Additional recommended courses to be chosen from: Evolution, Biochemistry, Biometry.

Master of Arts and Doctor of Philosophy

The enormous strides made in biology in this century have made possible new means of analysis of longstanding problems. In the process, the lines between traditional fields have become blurred. The organization of the Department into graduate sections reflects these developments, while building on the strong traditions of classical biology. The sections supervise graduate studies and research in their respective areas of emphasis.

1. Aquatic and Population Biology
2. Biochemistry-Molecular Biology
3. Environmental and Evolutionary Biology
4. Physiology and Cell Biology

Particular requirements for each graduate degree and in

each area of emphasis are listed under the appropriate headings below. To all applicants for admission to graduate status the Graduate Record Examination is required.

Master of Arts

Admission Requirements

In addition to fulfilling the general requirements for admission to graduate status, foreign students may be required to perform satisfactorily in an examination in English prior to admission. The Graduate Record Examination is required of all applicants.

A candidate for the master's degree must have, in addition to the general University requirements, the minimum lower and upper division requirements or their equivalents for the departmental major in the field of emphasis chosen. Students with minor deficiencies in these requirements will normally be allowed to complete them while in the graduate status.

Doctor of Philosophy

Admission Requirements

In addition to fulfilling the general requirements for admission to graduate status, foreign students may be required to perform satisfactorily in an examination in English prior to admission. The Graduate Record Examination is required of all applicants.

Prospective candidates for the degree of Doctor of Philosophy in biology normally must have the bachelor's degree in one of the biological sciences from this University, or from an institution of equivalent standing and with a preparation deemed equivalent to that required for the bachelor's degree from this University. The student who is admitted to graduate standing with deficiencies in preparation will be required to take appropriate undergraduate courses. A student who has completed a major in a subject other than the biological sciences is advised to consult with the Department chairperson.

Each candidate will be required to qualify for and hold a Teaching Assistantship for at least two quarters as part of the preparation for the Ph.D.

General Degree Requirements

A reading knowledge of one foreign language, appropriate to the student's field of interest, is required.

Each prospective candidate is required to take a qualifying examination administered by the department.

Each candidate must complete a doctoral dissertation under the general supervision of a committee. A final oral examination is given on the dissertation and its implications.

Emphasis in Aquatic and Population Biology

Each graduate student in Aquatic and Population Biology must meet the equivalent of the minimum requirements of one of the undergraduate majors in the Department of Biological Sciences at UCSB, including a year of calculus in college. Students with degrees in disciplines other than

biological sciences also must complete these requirements.

All candidates for a higher degree are required to take Biology 136A and Biology 136B, or equivalent.

Requirements for the M.A.: (See General University and Departmental Requirements).

Plan I: Thesis Plan — A minimum of 30 quarter units in courses in the major subject approved by the student's adviser and a thesis are required. The units may be taken in graduate or upper division courses, and at least 12 must be in the 200 and 500 series in the major subject. Courses outside the major may be substituted upon written approval by the student's advisory committee.

Plan II: Comprehensive Examination Plan — A minimum of 36 quarter units in courses in the major subject of which at least 18 units must be in the 200 and 500 series and satisfactory performance in a comprehensive final examination are required. Courses outside the major may be substituted upon written approval by the student's advisory committee. The Comprehensive Examination will cover a major and a minor area of emphasis. The major emphasis must be selected from the list given below for the Ph.D. program. The minor area may be selected from this list or, with the approval of the section, from another appropriate discipline.

Requirements for the Ph.D.: (See General University and Departmental Requirements).

The student must meet all of the University and Departmental requirements for the Ph.D. degree.

The following is a list of specialized areas of graduate study in Aquatic and Population Biology:

1. Biological Oceanography and Limnology
2. Comparative Immunology
3. Parasitology
4. Population Ecology
5. Population Genetics
6. Algal Ecology
7. Mathematical Biology
8. Ecological Physiology of Crustaceans and Fishes
9. Paleoecology
10. Evolutionary Ecology
11. Biology of Deep Sea Animals

Each student is expected to select one of these areas as a major field of study. One minor area of study must be selected from these areas or, with the approval of the graduate committee, from any other discipline in the University.

Emphasis in Biochemistry-Molecular Biology

Students interested in pursuing graduate work in biochemistry-molecular biology are advised to obtain a strong background in chemistry, physics and mathematics and to be familiar with the concepts of biology. The undergraduate preparation should include, as a minimum, the equivalent of the following courses offered at UCSB:

BIOLOGY

General	11A—B—C	14
Genetics	130A—B	8
Biochemistry	108A—B—C	12

CHEMISTRY

General	1A, 1B, 1C	12
Organic	130A—B—C	12
	6A—B—C	6
Physical	113A—B—C	12

MATHEMATICS	3A—3B—3C, followed by a fourth course in mathematics (Differential Equations recommended) ...	16-20
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PHYSICS	6A—AL—B—BL—C—CL	12
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Applicants with strong undergraduate records, but lacking some courses equivalent to those indicated above, may be admitted upon the condition that such deficiencies are removed during the first year of graduate study. For example, chemistry or physics majors with insufficient experience in biology, or students with extensive preparation in the biological sciences but inadequate training in chemistry, can often remedy these omissions subsequent to admission.

Requirements for the M.A.: (see General University and Departmental requirements). Students will follow one of the following two plans

Plan I: Thesis Plan — (Open only to students who obtain permission from the Biochemistry-Molecular Biology Section.)

A minimum of 30 quarter units and a thesis are required. The units may be taken in graduate or upper division courses in the major subject, and at least 12 will normally be in the 200 and 500 series in the major subject. Courses outside the major may be substituted upon written approval by the student's advisory committee. No unit credit is allowed for the thesis.

Plan II: Comprehensive Examination Plan — A minimum of 36 units of upper division and graduate courses in the major subject is required, of which at least 18 units will normally be in the 200 and 500 series in the major subject. At least 9 of the 200 series graduate units must be in courses excluding seminars. Courses outside the major may be substituted upon written approval by the student's advisory committee. Satisfactory performance is also required in a Comprehensive Examination which will cover one specialized area from each of two area groups of graduate study listed below for the Ph.D. program.

Requirements for the Ph.D.: (see general University and Departmental requirements).

Students must pass two qualifying examinations, each consisting of a written research proposition followed by an oral defense of the proposition. The examinations are to be taken at the beginning of the second and of the third year of graduate study, respectively. Topics for the research propositions are to be selected from three of the following areas, such that at least two area groups are represented.

Group A

1. Physical Chemistry of Macromolecules
2. Nucleic Acids
3. Proteins

Group B

4. Microbiology
5. Virology
6. Biology of the Eukaryotic Cell

Group C

7. Molecular and Cellular Genetics and Regulation
8. Developmental Biology

In addition, students must a) register for Biology 260 and 262 every quarter, b) take two seminars of the Biology 595 series per year until admission to candidacy, and c) take at least one upper division course (beyond admission requirements) or a graduate course during the first year of residency (if possible) in each of the above eight subdivisions.

Emphasis in Environmental and Evolutionary Biology

Programs in Environmental and Evolutionary Biology concern plants and animals, emphasizing ecological and evolutionary studies, and utilizing coordinated field and laboratory experiments and observations. Students intending to pursue graduate work in Environmental and Evolutionary Biology must complete the equivalent of the minimum requirements of the undergraduate major in Environmental Biology, Botany, or Zoology at UCSB. Students who are admitted to one of the graduate programs with deficiencies in their undergraduate major will be expected to make these up as soon as possible following their admission. The Graduate Record Examination is required of all applicants.

Requirements for the M.A.: (see General University and Departmental requirements).

A student may select Biology, Botany, or Zoology as his major field. The M.A. degree may be earned by following either Plan I or Plan II. The major emphasis must be selected from the list of specialized areas of study mentioned below under Requirements for the Ph.D., but the minor emphasis may be selected from this list or from appropriate disciplines in other sections or departments.

Plan I: Thesis Plan — A minimum of 30 quarter units and a thesis are required. The units may be taken in graduate or upper division courses in the major subject, and at least 12 must be in the 200 and 500 series in the major subject. Courses outside the major may be substituted upon written approval of the student's advisory committee. No unit credit is allowed for the thesis.

Plan II: Comprehensive Examination Plan — A minimum of 36 units of upper division and graduate courses in the major subject is required, of which at least 18 units must be in the 200 and 500 series in the major subject. Courses outside the major may be substituted upon written approval of the student's advisory committee. Satisfactory performance in a comprehensive final examination is also required. The Comprehensive Examination will cover a major and one minor area of emphasis. The major emphasis must be selected from the list given below for the Ph.D. program. The minor emphasis may be selected from this list or, with the written approval of the Committee, from appropriate disciplines in other sections or departments.

Requirements for the Ph.D.: (see General University and Departmental requirements).

Each student will select, with the approval of his advisor,

ry committee, a major and two minor areas of emphasis. The major emphasis must be selected from the list below, but the minor emphasis may be selected from this list or from appropriate disciplines in other sections or departments.

The following is a list of specialized areas of study in the section of Environmental and Evolutionary Biology:

1. Biology of Arthropods
2. Biogeography
3. Ichthyology
4. Plant ecology (physiological or community ecology)
5. Plant physiology
6. Plant systematics and evolution (biochemical systematics, biosystematics, taxonomy)
7. Vascular plant anatomy
8. Vertebrate behavior and ecology
9. Vertebrate evolution, morphology and systematics.

The oral qualifying examination for the Ph.D. degree must be taken before the end of the seventh quarter following matriculation in the Graduate Division.

Emphasis in Physiology and Cell Biology

Students interested in pursuing graduate work in this area should obtain a strong background in chemistry, physics and biology. As a guide for the undergraduate planning a career in this area of biology it is suggested that the student acquire the knowledge and experience similar to that suggested for the undergraduate major in physiology and cell biology. Electives should be chosen which are pertinent to the student's proposed area of specialization.

Requirements for the M.A.: (see General University and Departmental requirements) a) In addition to the general University requirements, the student must have the minimum lower and upper division courses, or their equivalents, recommended for undergraduates interested in physiology and cell biology. b) Students will follow one of the following two plans.

Plan I: Thesis Plan — A minimum of 30 quarter units and a thesis are required. The units may be taken in graduate or upper division courses in the major subject, and at least 12 must be in the 200 and 500 series in the major subject. Courses outside the major may be substituted upon written approval by the student's advisory committee. No unit credit is allowed for the thesis.

Plan II: Comprehensive Examination Plan — A minimum of 36 units of upper division and graduate courses in the major subject is required, of which at least 18 units must be in the 200 and 500 series in the major subject. Courses outside the major may be substituted upon written approval by the student's advisory committee. Satisfactory performance in a comprehensive final examination is also required. The Comprehensive Examination will cover three of the specialized areas of graduate study listed in the Ph.D. program.

Requirements for the Ph.D.: (see General University and Departmental requirements). The following is a list of the specialized areas of graduate study available to the student:

1. Cell physiology
2. Development
3. Comparative physiology

4. Endocrinology
5. Neurobiology (neurophysiology, ultrastructure, behavior, development)
6. Plant physiology
7. Cell structure and function
8. Pharmacology
9. Biology of Invertebrates

The student will be expected to choose one of the areas listed above as a major field of study. Two minor areas of study may be selected from either the areas listed above or some area outside the section of physiology and cell biology. Courses approved by the student's graduate committee will be distributed in the major and two minor areas of specialization.

Interdepartmental Program of Graduate Studies in Biochemistry and Molecular Biology

This program provides an alternative to the standard graduate programs in Biological Sciences and Chemistry. It is sponsored jointly by the Departments of Biological Sciences and Chemistry on the premise that, while the subject matter of biochemistry and molecular biology is tremendously diverse, there exists a common core of knowledge in the field. The program aims to be hospitable to the diversity of background and outlook of students entering the field of Biochemistry and Molecular Biology. It allows for undergraduate preparations of either chemical or biological orientation by providing flexible routes of entry to advanced study in the field. However, it is intended that these routes converge on what is considered to be a common core of knowledge, fundamental to any involvement with the numerous specialty areas in the field. The core curriculum is designed to offer an optimal foundation on which subsequent specialization could be built, without tying the student to a given specialty area by bonds of too narrow a preparation.

For details see the separate entry under Biochemistry and Molecular Biology.

Career opportunities

Many students in the Department of Biological Sciences prepare for entry into graduate or professional schools upon graduation. These students should discuss their undergraduate programs with their advisers, with a view to their plans for continued education. Many other students in the Department plan to enter a wide range of careers upon gaining their Bachelor of Arts degree. These students may profit from consulting with specially designated faculty advisors who are informed about certain specialized careers which are open to graduates with an undergraduate education in biological sciences.

Pre-professional programs leading to subsequent study in agriculture, dentistry, forestry, laboratory technology, medicine, nursing and similar professions are highly variable depending (a) upon the field, and (b) upon the professional training institution to be attended. The student should become familiar with the requirements of several institutions offering work in the specialty before discussing the program with the counselor.

In general, students preparing for careers in medicine, dentistry, nursing and laboratory technology will select one

of the following as their major field: Biochemistry-Molecular Biology, Biological Sciences, Physiology and Cell Biology, or Zoology.

Aquatic Biology, Biological Sciences, Botany, Physiology and Cell Biology or Environmental Biology would be suitable for preparation for further study in agriculture and forestry, and wildlife and water management.

Pharmacology prepares for a research career in pharmacology or for graduate work in fields of biomedical science.

Teaching Credentials

A bachelor's degree in Biological Sciences is an acceptable major for entry into a Single Subject (secondary) or Multiple Subject (elementary) Credential Program.

Students completing this degree, who plan to teach at the secondary level in California, should apply to the Single Subject Credential Program in the area of Life Sciences. The State of California requires that credential candidates demonstrate their subject matter competency in this teaching area. Subject matter competency can be established in one of two ways: either by passing the National Teachers Examination in this teaching area or by completing a State approved program. (The approved program consists of selected course work included in the degree program.)

Biology

Lower Division courses

4FS • Special Topics in Molecular Biology (2) Taborsky

Prerequisites: Courses in high school chemistry and biology. Freshman Seminar, two hours. Not offered 1980-81.

Exploration of the molecular basis of selected characteristics of living systems. Biological order, specificity and continuity will be considered in terms of molecular descriptions of cells and cellular processes. (F)

5FS • Viral Etiology of Human Diseases (1) Samuel

Freshman Seminar, one hour. Not offered 1980-81.

An introduction to the principles and methodologies of animal virology with emphasis on viruses which cause diseases in humans. (W)

11A • Introductory Biology (5) Staff [B1]

Lecture, four hours; laboratory, three hours. Introduction to cell structure, metabolism, and cell and organismal physiology. (F)

11B • Introductory Biology (5) Staff [B1]

Prerequisite: Biology 11A. Lecture, four hours; laboratory, three hours.

Introduction to genetics, developmental biology, ecology, and evolution. (W)

11C. • Introductory Biology (5) Staff [B1]

Prerequisites: Biology 11A and 11B. Lecture, three hours; laboratory, six hours.

Introduction to the major groups of microbes, plants, and animals. (S)

20 • Concepts of Biology (4) Staff [B1]

Lecture, four hours

Unifying principles of biology; cell structure, functions, and energy relations; cybernetics, natural selection, evolution; reproduction and the principles of genetics and development; nature and growth of populations. Not ordinarily open to majors in the Department of Biological Sciences for credit. Not open for credit toward graduation to students who have completed Biology 22 or Botany 20 or Natural Science 1C. (SS)

20Z • General Biology for Modern Man (4) Childress [B1]

Lecture, three hours; laboratory, three hours. Not offered 1980-81.

This course will emphasize those aspects of Biology considered to be particularly relevant to a citizen in today's world. It will place emphasis on the environmental aspects of biology, but will also give an overall view of biology. Not ordinarily open to the majors in the department of biological sciences for credit. (S)

21 • Topics in Ecology (4) Cooper. [B1]

Lecture, three hours; discussion, 1 hour.

Principles of ecological science and the application of these principles to current environmental issues. Not open to majors in the Department of Biological Sciences for credit. (W)

22 • Topics in Human Biology (4) Laris [B1]

Lecture, three hours; discussion, one hour. Not offered in 1980-81.

Discussion of a number of principles and discoveries in physiology, heredity and ecology of importance to man. Not ordinarily open to majors in the Department of Biological Sciences for credit. Not open for credit toward graduation to students who have completed Biology 20, Botany 20, or Natural Science 1C. (W)

Students should consult with department advisors, or advisors in the Graduate School of Education about courses which, when completed, eliminate the need for taking the National Teachers Examination.

Students who wish to pursue a Multiple Subject (elementary) Teaching Credential are advised that the State of California requires that students complete either a Liberal Studies program (see details in section J of the catalog), or pass the National Teachers Examination (Common Examination). It is quite feasible for students to complete a degree major and to simultaneously fulfill the requirements for the Liberal Studies program.

Admission to credential programs at UCSB also requires certain prerequisites, as follows:

Multiple Subject Program:

English 106, Ergonomics 109, Mathematics 100A-B, and pre-professional experience.

Single Subject Program:

English 106, Ergonomics 109, and pre-professional experience.

Correspondence information

Department of Biological Sciences, Building 478, Room 1200A, University of California, Santa Barbara, California 93106. Telephone: (805) 961-3511.

23 • Human Development and Reproductive Physiology (4) Triplett [B1]

Lecture, three hours; discussion, one hour.

Human development with emphasis on events occurring prior to parturition. Hormonal devices involved in human reproduction. Comments on senescence and carcinogenesis. Not ordinarily open to majors in the Department of Biological Sciences for credit. (F)

24 • Biology of Freshwater and Marine Environments (4) RW Holmes [B1]

Lecture, three hours; discussion, one hour.

A study of the physical, chemical, and biological interactions in freshwater and marine environments and the manner in which these interactions affect primary productivity and aquatic plant diversity. The effects of disturbance upon aquatic ecosystems will be evaluated. Not ordinarily open to majors in the Department of Biological Sciences for credit. (S)

26 • Heredity and Evolution (4) Walters [B1]

Lecture, three hours; discussion, one hour.

The basic principles and mechanisms of heredity and of organic evolution, with special attention to their application to human affairs. Not open to majors in the Department of Biological Sciences for credit. (S)

40 • Elements of Aquatic Biology (4) Trench [B1]

Prerequisites: Chemistry 1A—B—C. Lecture, three hours; discussion, one hour.

A discussion of phenomena of basic importance to the biology of aquatic organisms, fresh or salt water. The course will represent an integrated survey of physical, chemical, geological and biological parameters of aquatic life, both present and past. (S)

91 • Biological Aspects of Health and Disease (2) Kohl and Staff.

Seminar, two hours; discussion, two hours.

This course will present students with the opportunity to investigate in depth selected biological issues of health and disease. Factual, current information will be presented by guest lecturers, staff and audio-visual materials, supplemented by readings from the appropriate scientific literature. Students will be expected to demonstrate critical evaluation of specific issues. (F, W, S)

Contemporary Natural Sciences (See Natural Science 1A—B—C) (4-4-4) Staff [B1]
Sequence, beginning in the fall.

Upper Division courses**101 • General Physiology** (3) Gibor [B1]

Prerequisites: Biology 11A—B—C (or equivalent), and organic chemistry, with laboratory. Lecture, three hours.

Chemical and physical principles which govern some properties of living matter and its interaction with the environment. (F)

102 • Methods in Cell Physiology (3) Gibor [B1] Not offered 1980-81.

Prerequisite: Biology 101 or consent of instructor. Laboratory, six hours; discussion, one hour.

Experiments, demonstrations and discussion on methods used in cell physiology. (S)

103 • Introduction to Developmental Mechanisms (3) Kohl [B1]

Prerequisites: Biology 130B. Lecture, 3 hours.

An introduction to the study of mechanisms that control development. (S)

104A • General Microbiology (6) Lee [B1]

Prerequisites: Biology 11A—B—C; Chemistry 8A—B and 6A—B, or 130A—B—C and 6A—B. Lecture, three hours; laboratory, six hours; Lab workshop, three hours.

An introduction to the biological properties of microorganisms; the historical foundations of the field; a study of the major groups of microorganisms, with emphasis on the bacteria, and viruses; their structure, cultivation, and pathogenicity. Laboratory experiments dealing with the isolation, cultivation, and enrichment of diverse microorganisms (F)

104B • General Microbiology (5) Englesberg [B1]

Prerequisites: Biology 104A. Lecture, three hours; laboratory, six hours.

Employing a developmental approach, lectures will cover one or more major topics in the physiology and genetics of bacteria. Assignments will be made to the original literature as well as to pertinent chapters in the text. In the course of developing a major topic references will be made to other aspects of physiology and genetics. It will be the students responsibility to become knowledgeable in these areas. The laboratory, integrated with the lecture, covers fundamental experiments in the field. (W)

105 • Neurobiology 1 (4) Case and Fisher [B1]

Prerequisite: Biology 11A. Lecture, three hours; discussion, one hour

Properties of the nervous system ranging from single cells to the whole organism using examples from vertebrates and invertebrates studied in terms of morphology, physiology and behavior. (F)

106 • Neurobiology II (4) Fisher and Case [B1]

Prerequisites: Neurobiology I and permission of instructor. Lecture, three hours; discussion, one hour.

A continuation of Neurobiology I. (W)

106L • Laboratory in Neurobiology (3) Case and Fisher [B1]

Prerequisites: Neurobiology I and concurrent enrollment in Neurobiology II and permission of the instructor. Laboratory, six hours

Histological, electrophysiological, and behavioral experiments designed to demonstrate basic principles of neurobiology. Students will be expected to complete an independent project. (W)

107 • Cytology and Cytogenetics (4) Walters [B1]

Prerequisites: Biology 11A—B—C or equivalent. Lecture, three hours; laboratory, three hours. Not offered 1980-81

Fundamentals of cellular structure and function, with special emphasis on the chromosomes, cell division, and the interrelations of cytology with genetics and evolution. (W)

108A • General Biochemistry (4) Sears [B1]

Prerequisites: Chemistry 130A—B—C and 6A—B (or Chemistry 8A—B and 6A—B). Lecture, three hours; discussion, one hour.

Chemistry of proteins; enzymic catalysis; bioenergetics; metabolism of carbohydrates. (F)

108B • General Biochemistry (4) Staff [B1]

Prerequisite: Biology 108A. Lecture, three hours, discussion, one hour.

Metabolism of biologically important compounds; metabolic control mechanisms (W)

108C • General Biochemistry (4) Carbon [B1]

Prerequisite: Biology 108A—B. Lecture, three hours; discussion, one hour.

Chemistry and metabolism of nucleic acids; biosynthesis of proteins; biochemical genetics. (S)

109L • Laboratory in Biochemistry (3) Staff [B1]

Prerequisites: Biology 108A—B (Biology 109L may be taken concurrently with Biology 108B.) Laboratory, nine hours.

Laboratory techniques in biochemistry. (F,W,S)

110A • Basic Pharmacology (4) Jacobs [B1]

Prerequisites: Biology 11A—B—B, Chemistry 1A—B—C, Chemistry 130A—B—C. Lecture, three hours; discussion, one hour.

Designed to provide the student with a comprehensive knowledge of the history and scope of pharmacology as a basic science. The principles of drug action and the relationship of pharmacology to physiology, chemistry, and biochemistry are emphasized. (F)

110B • Pharmacology of Hormones (4) Collins [B1]

Prerequisites: Biology 11A—B—C and Chemistry 130A—B—C. Lecture, three hours; discussion, one hour.

A consideration of the principles which govern the pharmacological use of hormones, hormone analogs and antagonists. (W)

110BL • Pharmacology Laboratory I (3) Jacobs [B1]

Prerequisites: Biology 110A and concurrent enrollment in Biology 110B. Laboratory, eight hours; discussion, one hour.

Analysis of drug sites and mechanisms of action using isolated tissues, organs and intact animal preparations. (W)

110C • Basic Pharmacology: Principles and Chemotherapy (3) Wilson [B1]

Prerequisites: Biology 110B or consent of instructor. Biochemistry majors may enroll in Biology 110C without prior enrollment in Biology 110B. Lecture, three hours.

Continuation of Biology 110A—B. Emphasis on Fundamental Principles of Pharmacology, drug-receptor theory, biochemical mechanisms of action of drugs. (S)

110CL • Hormone Pharmacology Laboratory (3) Collins [B1]

Prerequisites: Biology 110B and concurrent enrollment in Biology 110C. Discussion, one hour; laboratory, eight hours

An introduction into the assay procedures used to determine levels and evaluate the biological potency of hormones and hormone analogs in biological fluids and tissues. (S)

111 • Introduction to Hematology (2) Staff

Prerequisite: Consent of instructor. Lecture, one hour; laboratory, three hours.

Theory and practice on recognition of cell types, counting of various cell types, hematocrits, and recognition of abnormal hemoglobin. (S)

115 • The Biology of Cancer (3) Englesberg and Samuel [B1]

Prerequisites: Biology 130AB; or consent of instructors. Lecture, three hours. Not offered 1980-81.

Normal and malignant cells and viral, chemical, and spontaneous transformed cells, will be compared on a molecular and cellular basis as to the mechanism of growth control, structure of the cell membrane, transport, genetics, metabolism, nutrition and karyotype; the host range, genome expression and replication, genetics, and transmission of selected oncogenic viruses will be considered (S)

118 • Principles of Biochemistry (4) Taborsky [B1]

Prerequisites: Chemistry 1A—B—C, Chemistry 8A—B and 6A—B or consent of the instructor. Lecture, three hours; discussion, one hour.

An introduction to molecular structures and mechanisms of living systems. Not for majors in Biochemistry-Molecular Biology or Cellular and Organismal Biology. (S)

121 • Methods in Experimental Virology (1) Samuel

Prerequisites: Concurrent enrollment in Biology 122. Laboratory, one hour; discussion, one hour. Not offered 1980-81.

Demonstration laboratory. Practical instruction in, and discussion of, experimental techniques commonly employed in the growth, purification, assay, and biochemical characterization of animal viruses. (S)

122 • General Animal Virology (3) Samuel [B1]

Prerequisites: Biology 130A Lecture, three hours

An introduction to the biology of animal viruses with emphasis on the biochemical and biophysical properties of viruses; the mechanisms by which animal viruses replicate; the cellular effects of, and response to, viral infection, and selected aspects of medical virology (S)

123 • Molecular and Cellular Immunobiology (3) Sears [B1]

Prerequisites: The following courses, or their equivalents, or consent of the instructor: Biology 130A—B or Biology 127, Biology 108A—B—C. Lecture, two hours; discussion, one hour. Not offered 1980-81.

Introduction to, and evaluation of, the current concepts of immunology. Emphasis will be placed on immunoglobulin structure and function, cell-cell cooperation in the immune response, and the role of the major histocompatibility complex in regulating immune responsiveness (W)

125 • Reproductive Ecology (3) Warner [B1]

Prerequisites: Zoology 139 and consent of instructor. Lecture, three hours.

The evolution of life history patterns (fecundity, morality, sex ratio); mating systems and parental investment; group selection, altruistic and selfish behavior; other topics in sociobiology. (W)

127 • Immunogenetics (4) Cushing [B1]

Prerequisites: Upper division standing and satisfactory completion (C grade or above) of the following courses: Biology 11A and 11B or equivalent, Organic Chemistry, General Genetics 130A—B. Lecture, three hours; laboratory, three hours.

Emphasizes the relationships of biological aspects of immunology to genetics, molecular biology and the activities of cells. This is an advanced course not intended to satisfy prerequisites for medical technology or other biomedical schools. (F)

130A • Introductory Genetics: Elementary Mechanisms and Prokaryotic Genetics (4) Morse and Orias [B1]

Prerequisites: Biology 11A—B—C, Chemistry 1A—B—C. Lecture, three hours; discussion, one hour.

Introduction to the structure and function of the genetic material. The course covers the structure of DNA and the cellular and molecular mechanisms underlying DNA replication, mutation, recombination, transcription, translation and their regulation. Although the basic mechanisms to be considered are universal (applicable from viruses to man), the emphasis will be on bacteria and viruses, as they provide the best experimental documentation of the elementary mechanisms of genetics. Adequate background in the biology of bacteria and viruses will be provided in the course. (F,W)

130B • General Genetics (4) King, Kohl, and Walters [B1]

Prerequisite: Biology 130A. Lecture, three hours; discussion, one hour.

Introduction to the transmission and expression of genetic material as it occurs in nucleate organisms from yeast to man. The genetic biology of eukaryotes is considered on the molecular,

cellular, developmental, familial and population levels, with emphasis on inferences drawn from experiments and observations (W,S)

130C • Population Genetics (4) King [B1]

Prerequisites: Biology 130A and 130B, or equivalent. Lecture, four hours

The consequences of Mendelian principles in diploid populations, including quantitative genetics, genetic correlations, gene frequency, change under selection, the effects of mutation on populations, gene interactions in fitness, and ecological genetics. (W)

130L • Genetics Laboratory (2) Staff

Prerequisite: Biology 130A or consent of instructor. Laboratory, six hours.

An introduction to the experimental analysis of the mechanisms of heredity. (S)

131 • Evolution (3) Cushing [B1]

Prerequisites: Upper division standing, satisfactory completion (C grade or above) of Introductory Biology 11A and 11B, and General Genetics 130A—B. Lecture, three hours. Not offered 1980-81.

The story of biological evolution including consideration of the mechanisms involved. (W)

133 • Principles of Human Genetics (3) Walters [B1]

Prerequisites: An introductory Biology course. Lecture, three hours.

Basic processes of heredity in man and their application to such matters as the heredity-environment problem, population genetics, heredity counseling, medico-legal problems, selection and evolution. (F)

134 • Physiology of Algae (2) Sweeney

Prerequisites: Biology 11A—B—C and Organic Chemistry. Biochemistry recommended. Lecture, two hours.

Mineral nutrition, nitrogen fixation, pigments, photosynthesis, phototaxis, rhythms and other phenomena in algae will be studied using original papers. (W)

134L • Physiology of Algae-Laboratory Projects (2) Sweeney

Prerequisites: Biology 134, and permission of instructor. Laboratory, 6 hours.

Techniques commonly used in research with marine and freshwater algae will be applied to selected algae, including phytoplankton from the culture collection at UCSB and local larger algae. (S)

135 • Basic immunology (4) Cushing, Triplett [B1]

Prerequisites: Biology 11A—B—C and Chemistry 1A—B—C or equivalent completed with grades of C or better; upper division standing, and pre-enrollment following consent of instructor. Lecture, two hours; laboratory, six hours.

Provides basic concepts and laboratory experience in dealing with immunology phenomena (Suitable for students in need of instruction in immunology as imposed by state requirements. Not open to students who have completed Biology 127.) (S)

136A—B • Biometry (4-4) Stewart-Oaten [B1]

Prerequisites: Mathematics 3A—B—C, or 34A—B, and at least one UD course in Biology,

Botany or Zoology, as required for one of the departmental majors. Lecture, three hours. Laboratory three hours.

Statistical methods in biology. Includes descriptive statistics, frequency distributions, statistical inference, analysis of variance, correlation, regression, and non-parametric methods. Special emphasis is placed on their interpretation, correct application and efficient computation. (F,W)

137 • Cell Biology (4) Cronshaw [B1]

Prerequisite: Biology 11A—B—C. Lecture, three hours; discussion, one hour.

An introduction to the structure of the function of cell organelles: Membranes, Nucleus, Mitochondria, Chloroplasts, Endoplasmic Reticulum, Golgi Apparatus, Lysosomes, Microbodies, Microtubules, Cilia, Centrioles and Microfilaments. (F)

139 • Cell Structure and Function (3) Cronshaw [B1]

Prerequisite: Biology 137. Lecture, three hours.

Advanced studies of the structure and function of subcellular components. (W)

140 • Mammalian Cells in Culture (3) Englesberg [B1]

Prerequisites: Biology 104A, 104B, 130A, 130B and two quarters of biochemistry. Lecture, three hours.

It is virtually impossible to study mammalian cells in culture without coming to grips with the problem of *malignancy*. This course will cover the fundamental properties of the mammalian cell in culture and the relationship of these properties to *CANCER*. The following topics will be covered: growth, nutrition, and metabolism of normal and malignant cells in culture; factors which regulate the growth; the establishment and characterization of primary cell cultures, strains, and cell lines; the human lymphoblast; virus transformation; the lectins; active transport; genetics, hybridization, mutant isolation and selection techniques, chromosome identification, association of a phenotype with a particular chromosome; genetics of malignancy. (S)

140L • Mammalian Cells in Culture Laboratory (2) Englesberg

Prerequisites: Concurrent enrollment in Biology 140 or previous enrollment and consent of instructor. Laboratory, six hours.

Selected experiments dealing with the establishment of primary cell cultures, maintenance of cell lines, growth, nutrition, genetics and transport, the lectins, growth control of normal and transformed cells. (S)

141 • Biology of the Marine-Land Interface (4) Staff [B1]

Prerequisite: One year of general biology. Lecture, two periods; discussion, one period; laboratory, six hours.

Influence of physical factors on adaptations of shoreline organisms with emphasis on the arthropods. (SS)

142 • Marine Microbiology (3) Prézélin [B1]

Prerequisite: Biology 11ABC; Chemistry 1ABC; Biology 145A—B. Lecture, three hours. Offered alternate years. (Not 1980-81).

To examine biochemical/physiological activities of marine microorganisms that influence biological/chemical conditions in the ocean. Topics

will include: sampling cultivation, distribution in ecosystems, role in nutrient cycling, stimulating inhibitory effects of metabolites, microbial disease and spoilage, and bioluminescence. (W)

142L • Marine Microbiology Laboratory (1) Prézelin

Prerequisites: *Biology 11ABC; Chemistry 1ABC; Biology 145A—B, Biology 142* Laboratory, three hours. Offered alternate years (Not 1980-81).

To introduce students to techniques used in sampling and culturing marine microorganisms. Laboratory studies will include composition, nutrition and successional analyses of microbial samples collected from the field. (S)

143 • Biology of Zooplankton (4) Staff [B1]

Prerequisite: *Junior standing in biology.* Lecture, five periods; laboratory, six periods. Not offered 1980-81.

Systematics, morphology, biology and ecology of zooplankton. (SS)

144 • Development of Marine Invertebrates (3) Staff [B1]

Prerequisites: *Biology 11A—B—C and Chemistry 1A—B—C.* Lecture, three periods; laboratory, six periods.

Descriptive embryology of marine invertebrates. Casual mechanisms in the development of invertebrates. (SS)

145A • Physics and Chemistry of Aquatic Environments (3) R. W. Holmes and Melack [B1]

Prerequisites: *Biology 11ABC.* Lecture, three hours.

A discussion of the physical and chemical characteristics of biological significance in freshwater and marine environments. (F)

145AL • Chemical and Physical Methods of Aquatic Environments (3) R. W. Holmes and Melack [B1]

Prerequisites: *Biology 145A or concurrent enrollment.* Laboratory, nine hours.

A survey of physical and chemical methods used by limnologists and oceanographers, supplemented with field observations. (F)

145B • Biological Processes in Aquatic Ecosystems (3) Alldredge and Prézelin. [B1]

Prerequisites: *Biology 145A.* Lecture, three hours.

A discussion of the biological processes of significance in fresh and marine systems including primary and secondary productivity, regenerative/mineralization cycles, seasonality, and general ecology of aquatic organisms including microbes, with emphasis on pelagic forms. (W)

145BL • Methods of Aquatic Biology (1) Alldredge and Prézelin

Prerequisites: *Concurrent enrollment in Biology 145B.* Laboratory, three hours.

Laboratory and field techniques used to measure various biological processes including productivity, and to sample, identify, enumerate and culture marine organisms. (W)

145C • Aquatic Communities (3) Warner.

Prerequisites: *Biology 145A—B; Zoology 140 recommended.* Lecture, three hours. [B1]

A survey of the patterns of distribution, diversity,

and abundance of species in marine and freshwater communities, with an emphasis on the dynamic interactions which shape these patterns. Applied aspects: fisheries, mariculture. (S)

145CL • Methods in Aquatic Community Ecology (1) Warner

Prerequisites: *Concurrent enrollment in Biology 145C.* Laboratory, three hours.

Experience in the field techniques of aquatic community ecology. (S)

147 • Biology of Coral Reefs (4) Trench [B1]

Prerequisites: *Zoology 112 (or equivalent); Biology 145A—B.* Lecture, three hours; discussion, one hour.

An in-depth discussion of coral reefs, including their paleontology, geomorphology and geochemistry, population biology and physiology. (F)

148 • Ecology of Running Waters (3) Cooper. [B1]

Prerequisites: *Biology 145B, Zoology 121.* Lecture three hours.

Review of literature on the physics, chemistry, and biology of running water ecosystems. (S)

148L • Investigations in Stream Ecology (2) Cooper.

Prerequisites: *Biology 145AL, Zoology 122, concurrent enrollment in Biology 148, and permission of instructor.* Laboratory, six hours.

Introduction to field methods used in lotic ecology. Design and execution of research projects emphasized. (S)

149 • Mariculture: Research Frontiers in Farming the Sea (3) Neushul, Ebeling and Morse. [B1]

Prerequisites: *Upper division standing in the Department of Biological Sciences.* Lecture, three hours.

This course will introduce the basic principles that are used in the domestication and propagation of marine plants and animals for human use, and the problems faced in commercializing such efforts. (S)

150 • Freshwater Zooplankton Biology (5) Cooper. [B1]

Prerequisites: *Biology 145B, Zoology 121.* Lecture, three hours; laboratory, six hours. Not offered 1980-81.

Systematics, ecology, morphology, and behavior of freshwater zooplankton with emphasis on current literature. Field and laboratory work emphasizing sampling and experimental techniques, behavioral observations, and identification of zooplankton. (W)

151 • Photosynthesis and Primary Productivity (3) Prézelin.

Prerequisites: *Biology 11ABC; Chemistry 1ABC; Biology 145A—B.* Lecture, three hours.

To introduce the process of photosynthesis and discuss the ecological/physiological aspects of determining primary production in aquatic systems. Offered alternate years. (S)

152 • Marine Phytoplankton: Biogeography and Productivity (2) R.W. Holmes

Prerequisites: *Biology 151 or consent of instructor.* Biology 145A—B recommended. Lecture, two hours. Not offered 1980-81.

An analysis of factors regulating marine phytoplankton distributions and primary productivity in the world's oceans. (W)

153 • Deep-Sea Biology (3) Childress [B1]

Prerequisites: *Biology 145A.* Lecture, two hours; laboratory, three hours.

This course considers the biology of midwater and benthic organisms living beneath the euphotic zone. It emphasizes dynamic aspects of biological processes in this unique environment. Surveys of major deep-sea taxa and the history of deep-sea biology are included (S)

154 • Biological Limnology (3) Melack [B1]

Prerequisites: *Biology 145A and 145B, or equivalent.* Lecture, 2 hours; discussion, 1 hour.

Emphasis on plankton dynamics, sediment-water interactions, biogeochemistry of watersheds, paleolimnology and latitudinal comparisons between temperate and tropical lakes. (S)

161 • Size in Biology (3) Sweet [B1]

Prerequisites: *Zoology 108.* Lecture, two hours; discussion, one hour. Offered even-numbered years.

An examination of the role played by body size in morphology, physiology and ecology, stressing the influence of the surface/volume disparity and variation in size on principles of structural and functional design. (F)

173 • Introduction to Mycology (4) Ross [B1]

Prerequisites: *Biology 11A—B—C and Biology 130A.* Lecture, three hours; laboratory, three hours.

An introduction to the structure and function of fungi with emphasis on their development and associations with other organisms, including man. Laboratory: A survey of the major forms and behavior patterns of fungi with practical instruction in isolation, cultivation and identification of micro-fungi. (W)

174 • Methods in Experimental Mycology (3) Ross [B1]

Prerequisite: *Biology 173 or consent of instructor.* Discussion, one hour; laboratory, six hours.

Techniques and experimentation fungal growth, development and differentiation. (F)

180 • Ecological Theory (3) Botkin. [B1]

Prerequisites: *Basic course in Ecology; knowledge of one computer language; Math through Calculus OR Matrix Algebra.* Lecture, two hours; laboratory, one hour.

The lectures expose the student to fundamental issues underlying the development of ecological theory and to the content of some of that theory. The laboratory provides experience in the use of computer simulation in ecological theory. (W)

192 • Special Topics in Biological Sciences (1-4) Staff

Prerequisites: *Upper division standing in biology and consent of instructor.* Lecture, one to four hours.

Special topics of current importance in biological sciences. The content of this course will vary. Information on course content may be obtained in the office of the Department. Course may be repeated and offered in satisfaction of unit requirements of the student's departmental major but credit for repeated enrollment in this course must be sought by petition.

194 • Group Studies for Advanced Students (1) Staff

Prerequisite: Consent of the instructor. Oral reports by students; one seminar period. (May be repeated for a maximum of four units.) Enrollment normally limited to 12 or fewer students.

- A—B **Biochemistry-Molecular Biology:** J. A. Carbon (AC); E. Englesberg (EE); D. M. Kohl (DK); N. Lee (NL); D. Morse (DM); E. Orlas (EO); C. E. Samuel (CES); D. Sears (DS); G. Taborsky (GT); E. L. Triplett (ET); L. Wilson (LW).
- C **Systematics:** J. R. Haller (JH); D. M. Smith (DS); S. Sweet (SS).
- D. **Plant Ecology:** B. Mahall (BM).
- E. **Embryology:** D. M. Kohl (DK); E. L. Triplett (ET).
- F. **General Physiology:** P. C. Laris (PL); A. Gibor (AG).
- G. **Virology:** C. E. Samuel (CES).
- H. **Immunology and Evolution:** J. E. Cushing (EC); E. L. Triplett (ET).
- I. **Phycology:** M. Neushul (MN).
- J. **Evolutionary and Behavioral Ecology of Vertebrates:** S. I. Rothstein (SIR).
- K. **Biometry:** A. Stewart-Oaten (AO).
- N. **Plant Physiology:** W. H. Muller (WHM).
- Q. **Aquatic Biology:** R. W. Holmes (RH); J. M. Melack (JM).
- R. **Neurophysiology:** J. F. Case (FC).
- S. **Protist Physiology:** B. Sweeney (BMS).
- T. **Parasitology:** A. Kuris (AK).
- U. **Biogeography:** J. R. Haller (JH).
- V. **Mycology:** I. K. Ross (IR).
- W. **Arthropod Biology:** A. Wenner (AW).
- X. **Cell Biology:** J. Cronshaw (JC).
- Y. **Plant Morphology:** M. Neushul (MN); M. F. Moseley (MM).
- Z. **Ecological Physiology:** J. J. Childress (CC).
- AA. **Evolutionary Ecology:** R. R. Warner (RRW).
- BB. **Pharmacology:** L. Wilson (LW); R. Jacobs (RJ); P. Collins (PC).
- DD. **Endocrinology:** P. M. Collins (PC).
- DS. **Molecular and Cellular Immunology:** D. Sears (DS).
- EE. **Symbiosis:** Concepts and Principles. R. Trench (RT).
- FF. **Photosynthesis:** B. Prézélin (BP).
- GG. **Evolutionary Morphology:** S. Sweet (SS).

***198 • Readings in Biological Sciences** (1-5) Staff

Prerequisites: A major in biological sciences and consent of the instructor.

Individual conferences one hour every two weeks. Special readings designed to broaden the outlook of students and to knit into a cohesive whole the basic principles underlying the major disciplines in the field. (F,W,S)

***199 • Independent Studies in the Biological Sciences** (1-5) Staff

Prerequisites: A major in biological sciences and consent of the instructor. Hours and credit by arrangement with any member of the staff. Laboratory or field. (F,W,S)

*Open ordinarily only to students in Upper Division standing (84 or more units completed) who have a B average or better. There is a maximum of five units per quarter, 15 units per year, and 30 units total in both 198/199 combined.

Graduate courses**203 • Models of Developing Cell Systems** (2) Triplett

Prerequisites: Biology 103 and consent of instructor. Lecture, two hours

A mathematical treatment of development phenomenon. Models of cellular differentiation and cellular associations. (S)

204 • Molecular Aspects of Cell Structure: Muscle, Microtubules, and Microfilaments (3) Wilson

Prerequisites: Consent of instructor (qualified seniors may enroll). Lecture, three hours. Not offered 1980-81.

Research-oriented course concerned with biochemical and molecular aspects of muscle, microtubules, and microfilaments. Functions, biochemical properties, and interactions of these macromolecular assemblies in cell motility, and in development and maintenance of cell shape will be discussed in depth. (F) odd numbered years.

205. • Developmental Mechanisms (3) Kohl

Prerequisites: Biology 130A—B. Zoology 100 is recommended. Lecture, three hours. Not offered 1980-81.

The study of mechanisms that control development. (S)

206 • Membrane Transport (2) Laris

Prerequisites: Zoology 101, and Biochemistry 108A, or consent of instructor. Lecture, two hours. Not offered 1980-81.

A review of the mechanisms of transport across biological membranes. (F)

207-A • General Microbiology (6) Lee

Prerequisites: Biology 11ABC; Chemistry 8AB and 6AB, or 130ABC and 6AB. Lecture, three hours; laboratory, six hours; individual laboratory work, three hours.

An introduction to the biological properties of microorganisms; the historical foundations of the field; a study of the major groups of microorganisms, with emphasis on the bacteria, and viruses; their structure, cultivation and pathogenicity. Laboratory experiments dealing with the isolation, cultivation, and enrichment of diverse microorganisms. Individual lab work required. (F)

207-B • General Microbiology (5) Englesberg

Prerequisites: Biology 104A or 207A or consent of the instructor. Lecture, three hours; laboratory, six hours.

Lectures will cover one or more major topics in the physiology and genetics of bacteria. Assignments will be made to the original literature as well as to pertinent chapters in the text. The laboratory, integrated with the lecture, covers fundamental experiments in the field. (W)

210 • Cell Heredity (3) Orlas

Prerequisites: Biology 130A—B and one quarter of Biochemistry, or consent of the instructor. Lecture, three hours.

The cellular and molecular mechanisms underlying the transmission and regulated expression of genetic determinants, with emphasis upon studies of microorganisms. (W)

211 • Ciliate Biology (3) Orlas

Prerequisite: Consent of instructor. Lecture, two hours; seminar, one hour.

Conceptual bases for the experimental use of Ciliates as models of eucaryotic cells in current frontiers of Biology; nuclear differentiation, membrane bioelectrics, cell morphogenesis and hormone action. An oral presentation of a paper in the recent literature will be required. (W)

212 • Molecular Virology (3) Samuel

Prerequisites: Biology 104A—B, 108A—B—C, and 130A—B, or consent of instructor. Lecture, three hours.

Consideration of current concepts of the structure, mechanisms of genetic expression, and cellular effects of animal viruses with emphasis on the molecular and functional aspects. The first part of the course will be devoted primarily to cytotoxic viruses, and the second part will deal specifically with tumor viruses. (W)

213 • Biochemistry of the Nucleic Acids (3) Carbon

Prerequisites: Biology 108A—B—C and Organic Chemistry or consent of the instructor. Lecture, three hours. Not offered 1980-81.

Nucleic acid structure and function, chemistry of nucleotides and polynucleotides, sequencing methods, biosynthesis, polymerases, and nucleases. (W)

214 • Structure and Function of Proteins (3) Taborsky

Prerequisite: Consent of the instructor. Lecture, three hours. Not offered 1980-81.

Aspects of the structure of proteins and protein-prosthetic group systems; interactive effects; mechanisms of action. (W)

215 • The Biology of Cancer (3) Englesberg and Samuel

Prerequisites: Biology 104AB, 122 or 212; or by consent of instructors. Lecture, three hours. Not offered 1980-81.

Normal and malignant cells and viral, chemical, and spontaneous transformed cells, will be compared on a molecular and cellular basis as to the mechanism of growth control, structure of the cell membrane, transport, genetics, metabolism, nutrition and karyotype. Selected DNA and RNA tumor viruses will be considered in terms of their host range, genome expression and replication in transformed cells, genetics, and transmission. (F)

216 • Pharmacological Probes In Cell and Molecular Biology (2) Wilson

Prerequisites: Open to selected seniors by consent of instructor. Lecture/seminar, two hours.

Lecture/seminar course concerned with drug-receptor interaction; primary emphasis being placed on the research application of drugs in the elucidation of biological processes. (F) even-numbered years.

217 • Toxins (2) R. Jacobs

Lecture, two hours.

This course covers in detail the pharmacological and toxicological properties of a variety of naturally occurring substances that have been isolated from marine and terrestrial organisms. The use of these substances to analyze physiological and biochemical processes is emphasized. (S)

220 • Experimental Cytology and Electron Microscopy (3) Cronshaw

Prerequisites: Biology 108A—B—C or consent of instructor. Lecture, one hour; laboratory, six

hours.

An introduction to the techniques of structural cytology. (S)

223 • Molecular and Cellular Immunobiology (3) Sears

Prerequisites: The following courses, or their equivalents, or the consent of the instructor: *Biology 130A—B* or *Biology 127*; *Biology 108A—B—C*. Lecture, three hours. Not offered 1980-81.

Introduction to, and evaluation of, the current concepts of immunology. Emphasis will be placed on immunoglobulin structure and function, cell-cell cooperation in the immune response, and the role of the major histocompatibility complex in regulating immune responsiveness. (S)

226 • Genetic Regulation: Advanced Systems (3) Staff

Prerequisites: *Biology 130A* or equivalent, and consent of instructor. Lecture, three hours.

Current status of advanced systems for the genetic dissection of mechanisms of gene regulation in the procaryotes and their viruses will be discussed in lectures and seminars. (F)

227 • Developmental and Molecular Biology of Slime Molds and Fungi (3) Ross

Prerequisites: *Biology 108A—B—C*; *130A—B*; and consent of instructor. Lecture, two hours; discussion, one hour. Not offered 1980-81.

Current concepts of the control mechanisms regulating cell interactions and differentiation in cellular and plasmodial slime molds and fungi. Emphasis will be on aspects of cell communication leading to sexual and somatic fusions and aggregations; the genetic and nuclear migration basis of sexual distinction will be explored. The techniques and methodology of experimentation on these organisms that has led to them being ideal model systems in modern biology will be discussed. An oral presentation of a research topic in the current literature will be required. (F)

230C • Population Genetics (4) King

Prerequisites: *General Genetics (130A and B or equivalent)*. Lecture, four hours.

The consequences of Mendelian principles in diploid populations, including quantitative genetics, genetic correlations, gene frequency, change under selection, the effects of mutation on populations, gene interactions in fitness, and ecological genetics. (W)

230L • Genetics Laboratory (2) Orias

Prerequisites: *Biology 130A* or consent of instructor. Laboratory, six hours.

Experimental analysis of the mechanisms of heredity (S)

232 • Molecular Evolution (3) King

Prerequisite: Consent of instructor. Lecture, two hours; seminar, one hour. Not offered 1979-80.

The analysis and interpretation of evolutionary divergence of proteins and nucleic acids. The discussion will focus on calculation of rates of molecular change, the patterns and processes involved, the construction of phylogenetic trees, and some of the basic laboratory procedures (F)

234 • Physiology of Algae (2) Sweeney

Lecture, two hours

Physiology of the responses of marine and freshwater algae to light, temperature and the chemical composition of their environment (W)

235 • Advanced Topics in Algology (2)

Gibor

Prerequisites: *Biology 134*, *Botany 170*, *171*, or consent of instructor. Lecture, two hours.

The use of specialized algal species as model-systems for research of basic biological problems. (W)

236 • Biology of Cilia and Flagella (2) Gibor.

Prerequisites: *Cell Biology*, *Biochemistry*. Lecture, two hours. Not offered 1980-81.

The development, structure and function of cilia and flagella of unicellular and multicellular eucaryotic organisms will be considered. Emphasis will be on problems such as control and coordination as well as origin and evolution of these organelles. (W)

237AB • Biometry (4-4) Stewart-Oaten

Prerequisites: *Mathematics 3A—B—C* or *34A—B*, and at least one UD course in biology, botany or zoology, as required for one of the departmental majors. Lecture, three hours; laboratory, three hours.

Statistical methods in biology. Includes descriptive statistics, frequency distribution, statistical inference, analysis of variance, correlation, regression, and non-parametric methods. Special emphasis is placed on their interpretation, correct application and efficient computation. (F,W)

241 • Mammalian Cells in Culture (3) Engleberg

Prerequisites: *Biology 104A*, *104B*, *130A*, *130B*, plus two quarters of biochemistry. Lecture, three hours.

Fundamental properties of mammalian cells in culture and the relationship of these properties to *CANCER*. Growth, nutrition, metabolism and active transport of normal and malignant cells, the establishment and characterization of primary cell cultures and cell lines; virus transformation; genetics. (S)

241L • Mammalian Cells in Culture Laboratory (2) Engleberg

Prerequisites: *Biology 241* or concurrently and permission of instructor. Laboratory, six hours.

Experiments dealing with the culturing of mammalian cells, their growth, nutrition and genetics. (S)

242 • Reproductive Ecology (3) Warner

Prerequisites: *Zoology 140* or equivalent. Lecture, three hours.

Evolution of demographic variables (fecundity, mortality, sex ratio); mating systems and parental investment; group selection, altruistic and selfish behavior; other topics in sociobiology. (W)

245 • Advanced Population Biology (3) Murdoch

Prerequisites: An ecology course and permission of instructor. Lecture, three hours. Not offered 1980-81.

A course dealing in depth with a few selected aspects of population and community dynamics of organisms. Extensive reading of original papers. (F)

247A • Mathematical Biology (3) Stewart-Oaten

Prerequisite: Consent of instructor. Lecture, three hours

Mathematical methods in biology, with particu-

lar emphasis on the use of matrices and vector spaces and with applications mainly in population biology, including demography, prey-predator systems, Markov processes, regression and analysis of variance. (W)

247B • Mathematical Biology (3) Stewart-Oaten

Prerequisite: Consent of instructor. Lecture, three hours.

Mathematical methods in biology, with particular emphasis on the use of matrices and vector spaces and with applications mainly in population biology, including demography, prey-predator system, Markov processes, regression and analysis of variance. (S)

248. • Ecology of Running Waters (3) Cooper.

Prerequisites: *Biology 145B*, *Zoology 121*. Lecture, three hours.

Review of literature on the physics, chemistry, and biology of running water ecosystems. (S)

248L • Investigations in Stream Ecology (2) Cooper.

Prerequisites: *Biology 145AL*, *Zoology 122*, and concurrent enrollment in *Biology 148*. Laboratory, three hours; field, three hours.

Introduction to field methods used in lotic ecology. Design and execution of research projects emphasized. (S)

249 • Mariculture: Research Frontiers in Farming the Sea (3) Neushul, Ebeling and Morse.

Prerequisites: Upper division or graduate standing in the Department of Biological Sciences. Lecture, three hours.

The course will introduce basic principles of plant and animal propagation and cultivation of organisms that are sources of food and fuel, and their commercialization. (S)

250 • Photosynthesis and Primary Production. (3) Prézelin.

Prerequisites: *Biology 11ABC*, *Chemistry 1ABC*. Lecture, three hours.

To introduce the process of photosynthesis and discuss the ecological/physiological aspects of determining primary production in aquatic systems. (S)

251 • Marine Phytoplankton: Biogeography and Productivity (2) R.W. Holmes

Prerequisites: *Biology 151* or consent of instructor. *Biology 145A—B* recommended. Lecture, two hours. Not offered 1980-81.

An analysis of factors regulating marine phytoplankton distributions and primary productivity in the world's oceans. (S)

252 • Marine Microbiology (3) Prézelin.

Prerequisites: *Biology 11ABC*, *Chemistry 1ABC*, *Biology 118*, *Biology 145ABC*; or equivalent of these courses. Lecture, three hours. Offered alternate years. (Not 1980-81).

To examine biochemical/physiological activities of marine microorganisms that influence biological/chemical conditions in the ocean. Topics will include: Sampling, cultivation, distribution in ecosystems, role in nutrient cycling, stimulating/inhibitory effects of metabolites, microbial disease and spoilage, and bioluminescence. (S)

252L • Marine Microbiology Laboratory (1) Prézelin.

Prerequisites: Biology 11ABC, Chemistry 1ABC, Biology 118, Biology 145ABC; or equivalent of these courses. Laboratory, three hours. Offered alternate years. (Not 1980-81).

To introduce students to techniques used in sampling and culturing marine microorganisms. Laboratory studies will include composition, nutrition and successional analyses of microbial samples collected from the field. (S)

253 • Freshwater Zooplankton Biology. (5) Cooper.

Prerequisites: Biology 145B, Zoology 121. Lecture, three hours; Laboratory, three hours; field, three hours. Not offered 1980-81.

Systematics, ecology, morphology, and behavior of freshwater zooplankton with emphasis on current literature. Field and laboratory work emphasizing sampling and experimental techniques, behavioral observations, and identification of zooplankton. (W)

254 • Biological Limnology (3) Melack

Prerequisites: Biology 145A and 145B, or equivalent. Lecture, two hours; discussion, one hour.

Emphasis on plankton dynamics, sediment-water interactions, biogeochemistry or watersheds, paleolimnology and comparisons between temperate and tropical lakes. (S)

255A • Methods in the Characterization of Biological Macromolecules (Joint listing with the Department of Chemistry) (3) Hooker

Prerequisites: Biochemistry, Calculus, Physical Chemistry or the consent of the instructor. Lecture, two hours; discussion, one hour.

Introduction to biophysical chemistry. Macromolecular structure and conformation, intermolecular interactions, and multiple equilibria (F)

255B • Methods in the Characterization of Biological Macromolecules (Joint listing with the Department of Chemistry) (3) Staff

Prerequisite: Biology 255A. Lecture, two hours; discussion, one hour.

Theory and practice of physical methods employed to study macromolecules. Spectroscopic techniques, including ORD, CD, UV, fluorescence and phosphorescence, NMR, ESR, EM, and X-ray diffraction. (S)

255C • Methods in the Characterization of Biological Macromolecules (3) Lee.

Prerequisites: Biology 255A—B or consent of the instructor. Lecture, two hours; discussion, one hour

(Joint listing with the Department of Chemistry.) The structure-function and physical properties of biological macromolecules with emphasis on hydrodynamic properties, including sedimentation diffusion, viscosity, osmotic pressure. (W)

260 • Research Seminar in Biochemistry-Molecular Biology (1) Staff (Joint listing with Dept. of Chemistry)

Prerequisite: Graduate status. Lecture, one hour. Seminars presented by faculty of the Chemistry Department and the Molecular Biology-Biochemistry Section of Biological Sciences.

Topics to be researched in progress (Required attendance for graduate students in the interdepartmental major in Biochemistry-Molecular Biology.) (F,W,S)

261 • Literature in Immunology (1) Sears.

Prerequisites: Consent of instructor. Lecture, one hour.

Critical reading and presentation of recent literature in immunology. (F,W,S)

262 • Literature in Molecular Biology (1) Englesberg

Prerequisites: At least one year of graduate work, and consent of the instructor. Discussion, one hour.

Critical reading and presentation of the current literature in molecular biology by staff, postdoctoral fellows and graduate students. (Required attendance for graduate students in Biochemistry and Molecular Biology.) (F,W,S)

264 • Literature in Nucleic Acids (1) Carbon and Orias

Prerequisite: Consent of instructor. Discussion, one hour.

Critical reading and presentation of the recent literature on nucleic acids by staff, postdoctoral fellows and graduate students. (F,W,S)

265 • Literature in Virology (1) Samuel

Prerequisite: Consent of instructor. Seminar, one hour.

Critical reading and presentation of the recent literature on animal viruses and host cells by graduate students, postdoctoral fellows, and staff. (F, W, S)

266 • Literature in Developmental Neurobiology (1) Fisher

Prerequisite: Consent of instructor. Lecture, one hour. Not offered 1980-81.

Critical reading and presentation of the literature on development of the nervous system, with emphasis on structural and biochemical changes, neuronal specification, and the development of behavior. (S)

267 • Literature in Neurobiology (1) Fisher and Case

Prerequisite: Consent of instructor. Lecture, one hour.

Critical reading and presentation of the literature in various topics in neurobiology including structure, physiology and behavior. (W)

268 • Literature in Population and Ecological Genetics (3) King

Prerequisite: Population Genetics. Lecture, one hour; seminar, one hour; discussion, one hour. Not offered 1980-81.

A survey of current and recent literature on the genetics of natural populations and theoretical population genetics. Gene flow, genetic adaptation to diverse habitats, and patterns of polymorphism. Each student presents and conducts a discussion. May be repeated for credit. (F)

269 • Literature in Pharmacology (1) Jacobs

Prerequisite: Consent of instructor. Lecture, one hour.

Critical reading and presentation of current literature in topics on pharmacology. May be repeated for up to four units. (F,W,S)

270 • Molecular Marine Biology (2) Morse

Prerequisites: Genetics and Biochemistry, or consent of the instructor. Lecture, one hour; seminar, one hour. Not offered 1980-81.

Explores recently successful, modern molecular biological, genetic and biochemical approaches to classical problems in marine biology,

related biomedical research, and the identification, utilization and protection of major marine biological resources. (S)

277 • Data Display (2) Wenner

Prerequisites: Research experience; Biometry recommended. Lecture, one hour; laboratory, three hours.

A consideration of the various means by which experimental results are represented in journals, including an analysis of all types of graphs, tables, and figures. The validity of accompanying interpretation will also be examined. (W)

280 • Ecological Theory (3) Botkin.

Prerequisites: Basic course in Ecology; knowledge of computer language; Math Calculus OR Matrix Algebra. Lecture, two hours; laboratory, one hour.

Exposure to fundamental issues underlying the development of ecological theory and to the content of some of that theory. Laboratory provides experience in the use of computer simulation in ecological theory. (W)

292 • Advanced Special Topics in Biological Sciences (1-4) Staff

Prerequisite: Consent of instructor. Lecture, one to four hours.

Special topics of current importance in biological sciences. The content of this course will vary. Information on course content may be obtained in the office of the Department. Course may be repeated, but credit for repeated enrollment must be sought by petition.

595A—Z • Group Studies (1) Staff.

Prerequisite: Consent of the instructor. Seminar, one to two hours.

A critical review of research in selected fields of biology. Subject matter for those seminars will be selected from the following list.

- A—B. **Biochemistry-Molecular Biology:** J. A. Carbon (AC); E. Englesberg (EE); D. M. Kohl (DK); N. Lee (NL); D. Morse (DM); E. Orias (EO); C. E. Samuel (CES); D. Sears (DS); G. Taborsky (GT); E. L. Triplett (ET); L. Wilson (LW).
- C. **Systematics:** J. R. Haller (JH); D. M. Smith (DS); S. Sweet (SS).
- D. **Plant Ecology:** B. Mahall (BM).
- E. **Embryology:** D. M. Kohl (DK); E. L. Triplett (ET).
- F. **General Physiology:** P. C. Laris (PL); A. Gibor (AG).
- G. **Virology:** C. E. Samuel (CES).
- H. **Immunology and Evolution:** J. E. Cushing (EC); E. L. Triplett (ET).
- I. **Phycology:** M. Neushul (MN).
- J. **Evolutionary and Behavioral Ecology of Vertebrates:** S. I. Rothstein (SIR).
- K. **Biometry:** A. Stewart-Oaten (AO).
- L. **Cell Evolution and Development:** A. Gibor (AG).
- N. **Plant Physiology:** W. H. Muller (WHM).
- P. **Advanced Population Ecology:** J. H. Connell (HC); W. W. Murdoch (WM); J. L. King (JK); A. Stewart-Oaten (AO).
- Q. **Aquatic Biology:** R. W. Holmes (RH); J. M. Melack (JM); A. Alldredge (AA); S. Cooper (SC).
- R. **Neurophysiology:** J. F. Case (FC).
- S. **Protist Physiology:** B. Sweeney (BMS).
- T. **Parasitology:** A. Kuris (AK).
- U. **Biogeography:** J. R. Haller (JH).
- V. **Mycology:** I. K. Ross (IR).
- W. **Arthropod Biology:** A. Wenner (AW).
- X. **Cell Biology:** J. Cronshaw (JC).

- Y. **Plant Morphology:** M. Neushul (MN); M. F. Moseley (MM).
- Z. **Ecological Physiology:** J. J. Childress (CC).
- AA. **Evolutionary Ecology:** R. R. Warner (RRW).
- AE. **Ichthyology Seminar:** A. W. Ebeling (AWE); R. R. Warner (RRW).
- DD. **Endocrinology:** P. M. Collins (PC).
- DS. **Molecular and Cellular Immunology:** D. W. Sears (DWS).
- EE. **Symbiosis:** Concepts and Principles: R. Trench (RT).
- FF. **Photosynthesis:** B. Prézelin (BP).
- GG. **Evolutionary Morphology:** S. S. Sweet (SSS).
- MM. **Contemporary Topics in Biochemistry and Molecular Biology:** D. Sears (DS).

596 • Directed Reading and Research (2-12) Staff

Prerequisites: Graduate standing and consent of instructor. May be repeated for credit up to half of the Graduate units required for the M.A. degree. (F,W,S)

597 • Individual Study for Master's Comprehensive Examinations and Ph.D. Examinations (1-12) Staff

Prerequisites: Graduate standing and consent of instructor. No unit credit allowed toward advance degree. Enrollment limited to 24 units per examination. Maximum of 12 units per quarter. (F,W,S,)

598 • Master's Thesis Research and Preparation (1-6) Staff

Prerequisites: M.A. (Thesis) candidate and consent of committee chairman. For research underlying the thesis and writing of the thesis. Maximum of 12 units total. No unit credit allowed toward degree. (F,W,S)

599 • Ph.D. Dissertation Preparation (1-12) Staff

Prerequisites: Ph.D. candidate and consent of instructor. May be repeated for credit up to 12 units total. For writing of the dissertation. (F,W,S)

Botany

Lower Division courses

20 • General Botany (5) W H. Muller, B. Mahall [B1]

Lecture, four hours; laboratory, three hours.

Unifying principles of biology utilizing plants as exemplary material; correlation of structure and function; genetics, selection, and evolution; energy transformation; growth of populations and the relation of plants to man; conservation.

Not ordinarily open to majors in the Department of Biological Sciences for credit. Not open for credit toward graduation to students who have completed Biology 20, Biology 22, or Natural Sciences 1C. (F,S)

Upper Division courses

103A • Flora and Vegetation of California (4) Haller. [B1]

Prerequisites: Introductory course in Botany or Biology or Environmental Studies 13. Lecture, two hours; laboratory/field, six hours.

An introduction to plant families, species and communities, in California by means of laboratory work and field observations, and including techniques of plant collection and identification.

One three-day field trip is required in addition to the regularly scheduled laboratories. (W)

103B • Vegetation and Flora of California (4) Haller. [B1]

Prerequisites: Botany 103A or equivalent. Lecture, two hours; laboratory/field, six hours.

A continuation of the material in Botany 103A, with increased emphasis on the composition and distribution of plant communities throughout California. Two field trips, three to four days each, are required in addition to the regularly scheduled laboratories. (S)

110 • Morphology of Bryophytes and Lower Vascular Plants. (4) Moseley [B1]

Prerequisite: Biology 11A—B—C, or consent of the instructor. Lecture, two hours; laboratory, six hours. Not offered 1980-81.

Study of the structure, life-cycles, anatomy, and relationships of Bryophytes and lower fossil and living vascular plants; conquest of the land. (W)

111 • Morphology of the Higher Vascular Plants (5) Moseley [B1]

Prerequisite: Biology 11A—B—C, or consent of the instructor. Lecture, three hours; laboratory, six hours.

Study of the structure, life-cycles, anatomy, and relationships of the fossil and living higher vascular plants; evolution of ovule, angiosperm, and the flower. (W)

113 • Plant Anatomy (5) Moseley [B1]

Prerequisite: Biology 11A—B—C, or consent of instructor. Lecture, three hours; laboratory, six hours.

An introduction to the anatomy of vascular plants. Fundamental descriptive, developmental and comparative aspects of anatomy. (F)

114 • Ecological Plant Anatomy (3) Moseley [B1]

Prerequisite: Botany 113. Lecture, two hours; laboratory, three hours. Not offered 1980-81.

The anatomical adaptations of vascular plants to environmental factors. (W)

120 • Introductory Plant Physiology (3) W. H. Muller [B1]

Prerequisites: Biology 11A—B—C; organic chemistry or consent of instructor. Lecture, three hours.

Functions of vascular plants; photosynthesis, assimilation, water relations, and growth regulators (S)

120L • Laboratory in Introductory Plant Physiology (2) W. Muller

Prerequisites: Concurrent enrollment in Botany 120 and consent of instructor. Laboratory, six hours.

Laboratory experiments and procedures in plant physiology. (S)

123 • Plant Physiology in Relation to Soil Factors (3) W. H. Muller [B1]

Prerequisites: Biology 11A and 11C or consent of the instructor. Lecture, 3 hours.

Development and characteristics of soils. Physiology of higher plants as affected by water, minerals, and other variables in the soil. (W)

140 • General Plant Ecology (2) Mahall

Prerequisites: Biology 11A—B—C. Lecture, two

hours.

An introduction to the principles of plant ecology. (F)

140L • General Plant Ecology Lab (2) Mahall

Prerequisites: Biology 11A—B—C and consent of instructor. Concurrent enrollment in Botany 140. Laboratory and field, six hours.

Field and laboratory research techniques. (F)

141 • Physiological Plant Ecology (4) Mahall [B1]

Prerequisites: Biology 11A—B—C, Botany 140, and consent of instructor. A course in plant physiology is strongly recommended. Lecture, three hours; laboratory, three hours.

A study of the environmental and physiological dimensions of plant distributions and niches. (W)

142 • Community and Ecosystem Ecology (4) Staff [B1]

Prerequisites: Consent of instructor. Botany 140 recommended. Lecture, three hours; laboratory, three hours.

The structure and function of plant communities including energy flow and mineral cycling processes. (S)

146 • Plant Geography (4) Haller [B1]

Prerequisites: Botany 103A—B or equivalent. Recommended: Geography 3 or Botany 140. Lecture, four hours.

The distribution of communities, floristic groups and individual species of vascular plants as determined by environment, migration and evolution. (F)

151 • Taxonomy of Vascular Plants (4) Smith [B1]

Prerequisites: Biology 11A—B—C, Botany 103A—B, or consent of instructor. Lecture, two hours; laboratory, six hours.

A systematic study of the characteristics and relationships of vascular plant families; the history, principles and methods of plant classification. (F)

152 • Principles of Plant Systematics and Evolution (3) Smith [B1]

Prerequisites: At least one course in both taxonomy and genetics and consent of instructor. Lecture, three hours.

Variation and evolution in higher plants and the relations of these phenomena to taxonomic practice. (W) Taught odd numbered years.

153 • Field and Experimental Methods in Plant Systematics (4) Smith [B1]

Prerequisites: At least one course in both taxonomy and genetics and consent of the instructor. Lecture, one hour; laboratory, six hours. Field trips to be arranged.

The application of field and laboratory procedures to studies of variation and evolution and the utilization of these data in plant systematics; consideration of race and species hybrids, cytotoxicology, chemotaxonomy (S) Taught even numbered years.

170 • Phycology (4) Neushul [B1]

Prerequisites: Biology 11A—B—C. Lecture, two hours; laboratory six hours.

An introduction to the algae, with emphasis on comparative morphology, evolution and classification. Attention is also given to environmental factors that influence marine and freshwater algal habitats. (F)

171 • Advanced Phycology (4) Neushul [B1]

Prerequisites: Botany 170—170L, or consent of instructor. Lecture, two hours; laboratory six hours

Development, differentiation and morphogenesis of algae. Emphasis is placed in the laboratory on the experimental manipulation of living plants. Algal cells are studied using both light and electron microscopes. (W)

176 • Systematics, Morphology, Structure, and Evolution of Aquatic Diatoms (1) R. W. Holmes

Prerequisites: Biology 145BL, and consent of instructor. Lecture, one hour. Not offered 1980-81.

A discussion of the systematics, structure, and evolution of aquatic diatoms. (W)

176L • Laboratory in Aquatic Diatoms (2) R. W. Holmes

Prerequisites: Botany 176, Biology 145BL, and consent of instructor. Laboratory, six hours. Not offered 1980-81.

Laboratory in the collection, treatment, and identification of planktonic and non-planktonic freshwater and marine diatoms at the generic level. (S)

Graduate courses

223 • Plant Physiology in Relation to Soil Factors (3) W. H. Muller

Prerequisites: Biology 11A—B and consent of instructor. Lecture, three hours.

Development and characteristics of soils. Physiology of higher plants as affected by water, minerals and other variables in the soil. (W)

241 • Advanced Physiological Plant Ecology (5) Mahall

Prerequisites: Biology 11A—B—C, Botany 140, and consent of instructor. A course in plant physiology is strongly recommended. Lecture, three hours; laboratory, six hours.

A study of the environmental and physiological parameters of plant distributions and niches with special reference to methods. (W)

242 • Community and Ecosystem Ecology (4) Staff

Prerequisites: Botany 140 or consent of instructor. Lecture, three hours; laboratory, three hours.

The structure and function of plant communities including energy flow and mineral cycling processes. A major term paper will be required. (S)

252 • Principles of Plant Systematics and Evolution (3) Smith

Prerequisites: At least one course in both taxonomy and genetics and consent of the instructor. Lecture, three hours.

Variation and evolution in higher plants and the relation of these phenomena to taxonomic practice. (W) Taught odd numbered years.

253 • Field and Experimental Methods in Plant Systematics (4) Smith

Prerequisites: At least one course in both taxonomy and genetics and consent of instructor. Lecture, one hour; laboratory, six hours. Not offered 1980-81.

The application of field and laboratory proce-

dures to studies of variation and evolution and the utilization of these data in plant systematics; consideration of race and species hybrids, cytotoxicology, chemotaxonomy. (S)

276 • Systematics, Morphology, Structure and Evolution of Aquatic Diatoms (1) R. W. Holmes

Prerequisites: Biology 145BL, and consent of instructor. Lecture, one hour. Not offered 1980-81.

A discussion of the systematics, structure and evolution of aquatic diatoms. To be given on a S/U basis only. (W)

276L • Laboratory in Aquatic Diatoms (2) R. W. Holmes

Prerequisites: Botany 276, Biology 145BL, and consent of instructor. Laboratory, six hours. Not offered 1980-81.

Laboratory in the collection, treatment, and identification of planktonic and non-planktonic freshwater and marine diatoms at the generic level. (S)

Zoology

Lower Division courses

25 • Human Anatomy (3) Staff [B1]

Prerequisite: Recommended: Biology 20 or other course in biology. Lecture, three hours.

The structure of the organ systems based on human material. (F,W)

25L • Laboratory in Human Anatomy (4) Staff [B1]

Laboratory, eight hours; discussion, one hour.

Dissection of the cat and human material. (F,W,S)

40 • Human Physiology (4) Staff [B1]

Prerequisites: Chemistry 1A or 25, or Physics 6A or 10. Concurrent enrollment in Zoology 40L except for those for whom Zoology 40 is an elective. Lecture, three hours; discussion, one hour. A course in general biology or anatomy is recommended.

An introduction to human physiology, with emphasis on control mechanisms. (S)

40L • Laboratory in Human Physiology (1) Staff

Prerequisites: Concurrent enrollment in Zoology 40. Laboratory, three hours.

An elementary course in experimental physiology, with emphasis on mammals. (S)

Upper Division courses

100 • Developmental Biology (3) Kohl and Triplett [B1]

Prerequisites: Biology 11A—B—C; Genetics recommended. Lecture, three hours.

Descriptive embryology of vertebrates and an introduction to developmental mechanisms. (W)

100L • Laboratory in Developmental Biology (2) Kohl and Triplett

Prerequisite: Concurrent enrollment in Zoology 100. Laboratory, three hours; discussion, one hour.

Laboratory techniques in Developmental Biology. (W)

101 • Topics in Cell Physiology (4) Laris [B1]

Prerequisites: Biology 11A—B—C, Organic Chemistry, Physics recommended. Lecture, three hours; discussion, one hour.

Discussion of mechanisms of transport across biological membranes, bioelectrical phenomena and cellular motility with emphasis on studies on animal cells. (S)

101L • Laboratory in Animal Cell Physiology (1) Laris

Prerequisite: Concurrent enrollment in Zoology 101. Laboratory, three hours.

Experiments in transport, bioelectricity and motion. (S)

105 • Functional Design of Fishes (4) Ebeling [B1]

Prerequisites: Biology 11A—B—C. Lecture, three hours; Laboratory, three hours.

An introduction to the study of fishes, emphasizing the interaction of morphology and function. (W)

108 • Vertebrate Evolutionary Morphology (5) Sweet [B1]

Prerequisites: Biology 11A—B—C. Lecture, three hours; laboratory, six hours.

Not open for credit to students who have completed Zoology 107—107L.

Lectures concern evolutionary and functional aspects of the development of structural complexity in vertebrates, emphasizing the role of size in determining mechanical and physiological optima and limits, and the constraints imposed by the evolutionary process. Labs involve dissections and demonstrations. (W)

111 • General Parasitology (5) Kuris [B1]

Prerequisites: Biology 11A—B—C. Lecture, three hours; laboratory, six hours.

An ecological approach to parasitism. Parasites of humans and other animals are surveyed. Evolutionary, sociological, political and economic aspects are discussed. Laboratory stresses anatomy and life cycles of living material. (S)

112A • Invertebrate Zoology (5) Staff [B1]

Prerequisite: Biology 11A—B—C, or Biology in the 20 series with consent of the instructor. Lecture, three hours; laboratory, six hours.

An introduction to the classification, structure, life histories and habits of the major phyla of invertebrate animals, with emphasis on the marine fauna of the Santa Barbara area. (F)

112B • The Invertebrate as an Experimental Animal (3) Staff [B1]

Prerequisite: Zoology 112A, or its equivalent. Lecture, three hours.

A consideration of the experimental advances that have been made with invertebrate animals in the control of development, organization, information transfer and behavior, with emphasis on the relation of these studies to the physiological ecology of groups. (W)

112L • Problems in Invertebrate Zoology (3) Staff [B1]

Prerequisite: Zoology 112B. Admission by consent of the instructor only. Discussion, one hour; laboratory, six hours.

The experimental approach to invertebrates. Individual and group problems in development, behavior and physiological ecology. (S)

113A • Evolution and Behavioral Ecology of Terrestrial Vertebrates (2) Rothstein

Prerequisites: Biology 11A—B—C and concurrent enrollment in Zoology 113AL. Lecture, two hours.

Evolutionary and ecological principles as demonstrated by birds, mammals and reptiles; competition and other species interactions, diversity and systematics with special emphasis on speciation theory. (F)

113AL • Laboratory and Discussion in Vertebrate Biology (3) Rothstein

Prerequisites: Concurrent enrollment in Zoology 113A. Laboratory, six hours; discussion, one hour.

Classification, identification and observation of local vertebrates stressing birds and herptiles. (F)

113B • Evolution and Behavioral Ecology of Terrestrial Vertebrates (2) Rothstein

Prerequisites: Zoology 113A and concurrent enrollment in Zoology 113BL. Lecture, two hours.

Principles of behavior as demonstrated by mammals, birds, and herptiles, and the manners in which behavior and ecology interact in determining the biology of vertebrates. A strong evolutionary approach will be emphasized. (W)

113BL • Laboratory and discussion in Vertebrate Biology (3) Rothstein

Prerequisites: Zoology 113A and AL and concurrent enrollment in Zoology 113B. Laboratory, six hours; discussion, one hour.

Classification, identification and observation of local vertebrates stressing birds and mammals. Introduction to research techniques used in the field by vertebrate biologists. (W)

113CL • Laboratory and Individual Research in Vertebrate Biology (2-4) Rothstein

Prerequisites: Zoology 113B and BL and consent of instructor. Laboratory, five to eleven hours; discussion, one hour.

Field studies of the vertebrates of California, stressing species and communities, requiring several extensive field trips; individual field and/or lab research projects dealing with theoretical problems posed by the biology of vertebrates. (S)

121 • Aquatic Arthropods (2) Wenner

Prerequisites: Biology 11A—B—C. Lecture, two hours.

Selected topics in the biology of aquatic arthropods, including classification, evolution, anatomy, life histories, and population structure. (F)

122 • Biology of Aquatic Arthropods (3) Wenner [B1]

Prerequisites: Biology 11A—B—C, Zoology 121 (may be taken concurrently). Laboratory, six hours; discussion, one hour.

Laboratory in the natural history and diversity of aquatic and semi-aquatic arthropods in the local ponds, streams, sloughs, and ocean; with an emphasis on their distribution, abundance, identification, systematics, and environmental adaptations. (F)

123 • Diversity of Aquatic Arthropods (2) Wenner

Prerequisites: Zoology 121 or 122 (may be taken concurrently) or 124 or 125. Discussion, one hour; laboratory, three hours.

Diversity and systematics in selected groups

of aquatic arthropods, including independent research in laboratory and field and coordination with findings of others. (F)

124 • Terrestrial Arthropods (2) Wenner

Prerequisites: Biology 11A—B—C. Lecture, two hours.

Selected topics in the biology of terrestrial arthropods (primarily insects), including classification, evolution, anatomy, life histories, and environmental adaptations. (S)

125 • Biology of Terrestrial Arthropods (3) Wenner [B1]

Prerequisites: Biology 11A—B—C, Zoology 124 (may be taken concurrently). Laboratory, six hours; discussion, one hour.

Laboratory in the natural history and diversity of terrestrial arthropods in the local area; with an emphasis on their distribution, abundance, identification, systematics, and environmental adaptations. (S)

126 • Diversity of Terrestrial Arthropods (2) Wenner

Prerequisites: Zoology 121 or 122 (may be taken concurrently) or 124 or 125. Discussion, one hour; laboratory, three hours.

Diversity and systematics in selected groups of terrestrial arthropods, including independent research in laboratory and field and coordination with findings of others. (S)

130 • Biology of Amphibians and Reptiles (4) Sweet [B1]

Prerequisites: Zoology 113A, 113AL; 113B, 113BL, or consent of instructor. Lecture, two hours; discussion, one hour; laboratory, three hours. Not offered 1980-81.

The evolution, systematics and functional morphology of modern amphibians and reptiles. Lectures will treat world-wide diversity; labs will emphasize western North American faunas. A term paper will be required. Offered even-numbered years. (S)

139 • Evolutionary Ecology (4) Holbrook [B1]

Prerequisites: Biology 11A—B—C, Zoology 140 or equivalent, and consent of instructor. Lecture, three hours; discussion, one hour.

Community ecology from an evolutionary viewpoint; natural selection, evolved relationships between organisms, evolutionary aspects of community structure and function, characteristics of paleocommunity organization, topics in paleoecology. (F)

140 • Ecology (4) Connell (F), Murdoch (W), Holbrook (S) [B1]

Prerequisites: Biology 11A—B—C; mathematics through introductory calculus or consent of instructor. Lecture, three hours; discussion, one hour.

The biology of populations and communities of organisms. Introduction to population dynamics and the structure and function of ecological communities. (F,W,S)

140AL—BL—CL • Laboratory in Ecology (3-3-3) Connell and Murdoch [B1]

Prerequisites: Zoology 140 (may be taken concurrently) or its equivalent, and consent of instructor. Laboratory, nine hours.

Laboratory and field analyses of the biology of population and communities. Both quarters must be taken; grades for both will be assigned upon

successful completion of 140BL. 140CL may be taken separately, but prerequisites are Zoology 140, 140AL—BL or its equivalent, and consent of instructor. (F,W,S)

143 • Ecological Physiology (3) Childress [B1]

Prerequisites: Biology 11A—B—C, Zoology 112A. Lecture, three hours.

This course will consider the physiological responses and adaptations of animals to their environments. The underlying physiological and biochemical mechanisms will be emphasized. The approach will be comparative in nature and will emphasize aquatic animals. (F)

143L • Laboratory in Ecological Physiology (2) Childress

Prerequisites: Concurrent enrollment in Zoology 143. Laboratory, six hours.

Semi-independent study lab to accompany Zoology 143. The physiological responses and adaptations of animals to their environment will be studied. Aquatic animals will be emphasized. (F)

154 • Vertebrate Physiology I: Regulation of Body Fluids (4) W. N. Holmes [B1]

Prerequisites: Zoology 108 or equivalent. Lecture, three hours; discussion, one hour.

The composition and distribution of the fluids in the extracellular and intracellular compartments of the vertebrate body will be studied. The homeostatic mechanisms responsible for the turnover and regulation of these fluids will also be examined. (F)

155 • Vertebrate Physiology II: General Endocrinology (4) W. N. Holmes [B1]

Prerequisites: Vertebrate Physiology I (Zoology 154). Lecture, three hours; discussion, one hour.

An introduction to the endocrine system in vertebrates and the nature of hormonal control mechanisms. (W)

156 • Vertebrate Physiology III: Reproduction (4) P. Collins [B1]

Prerequisites: Biology 11A—B—C. Lecture, three hours; discussion, one hour.

The hormonal mechanisms which regulate the initiation and maintenance of reproductive function in vertebrates will be examined at the organismal, cellular and intracellular level. The regulation of fertilization, pregnancy and parturition will be reviewed. Endocrine aspects of this subject will not duplicate the endocrine topics covered in Zoology 155 and will provide an appropriate background in physiology for Biology 110B. (F)

160 • Environmental Pollutants and Hormonal Regulation. (4) W. N. Holmes. [B1]

Prerequisites: Zoology 155 (General Endocrinology) or consent of instructor. Not offered 1980-81.

Selected examples will be used to show how the presence of some pollutants in the food web may adversely affect some essential hormonal systems in vertebrates. Particular attention will be paid to the effects of chlorinated hydrocarbon and organophosphate insecticides and petroleum hydrocarbons on steroid hormone regulated systems. (W)

161 • Systematics of Fishes (4) Ebeling [B1]

Prerequisites: Biology 11A—B—C. Lecture, two hours; laboratory, six hours. Not offered 1980-81.

The systematics of fishes, emphasizing their evolution, classification, and distribution. (W)

Graduate courses

211 • General Parasitology (5) Kuris

Prerequisites: Biology 11A—B—C. Lecture, three hours; laboratory, six hours.

An ecological approach to parasitism. Parasites of humans and other animals are surveyed. Evolutionary, sociological, political and economic aspects are discussed. Laboratory stresses anatomy and life cycles of living material. (S)

212 • Topics in Parasitology (3) Kuris

Prerequisites: Consent of instructor. Qualified undergraduates may take course with consent of

instructor. Lecture, two hours; laboratory, three hours.

Consideration of theoretical aspects of parasite ecology, evolution and physiology. General biology of a selected group of parasites chosen in consultation with students. Laboratory: individualized study of parasitological aspects relevant to students general interests. An oral and written report is required. (W)

237 • Animal Behavior as a Science (4) Staff

Prerequisites: A course in invertebrate Zoology and a university course in physiology. Lecture, three hours; discussion, one hour. Not offered 1980-81.

A comparative study of the methodology used in the study of behavior, including a treatment of perception, behavioral patterns, social organiza-

tions, and an analysis of various forms of communication. (F)

255 • Comparative Endocrinology (3) W. N. Holmes

Prerequisites: Zoology 155, or consent of instructor. Qualified seniors may take the course with the consent of the instructor. Lecture, two hours; discussion, one hour. Not offered 1980-81.

A detailed study of the hormonal regulatory mechanisms in vertebrates. (F)

255L • Experimental Endocrinology (3) W. N. Holmes

Prerequisite: Zoology 255. Laboratory, six hours; discussion, one hour. Not offered 1980-81.

Techniques of experimental endocrinology. (S)

Black Studies

Professor

Garth T. St. Omer, Ph.D., *Princeton University; comparative literature.*

Associate Professors

Gerard G. Pigeon, Ph.D., *UC Santa Barbara; literature and linguistics (Chairperson).*

Assistant Professor

Douglas H. Daniels, Ph.D., *UC Berkeley; American and Afro-American history.*

Concerns of the department

The Department of Black Studies seeks to increase the general awareness and understanding of the Black experience through an examination of its contemporary and historical manifestations in various societies. To do this, it utilizes a cross-cultural approach and incorporates the active participation of faculty, students, and the wider community.

The major in Black Studies is designed to provide (1) a broad cross-cultural orientation focusing on the heritage and contemporary social situation of Black people and, (2) instruction for students who intend to do graduate work in the area of ethnic-American studies or allied areas in the social sciences, humanities, and arts. The Department of Black Studies offers a major leading to the Bachelor of Arts degree. The faculty members of the department are available for students wishing to pursue an independent Masters of Arts in the area of Black Studies and/or African Area Studies.

Bachelor of Arts

Preparation for the major

Required: Black Studies 1A—B—C and 2 (or approved equivalents), and four courses from the following departments, with not more than two from any one department: Anthropology (2, 3, 5)

Economics (1,2)

Geography

History (4A—B—C or 17A—B—C)

Philosophy (1 or 5)

Political Science (5, 10)

Sociology (1, 2)

(Recommended courses are in parentheses)

Note: Courses except Black Studies, taken in preparation for the major will also apply to appropriate General Education requirements (see **M4**). Although a foreign language is not required, majors in Black Studies are encouraged to take at least three (3) quarters of a foreign language of their choice.

Upper Division major

Required: 36 units of upper division Black Studies courses, twelve (12) of which may be taken in upper division work in closely related departments or fields, chosen in consultation with the department adviser.

Career opportunities

This major is designed to provide undergraduate preparation for careers in teaching, community services, or in governmental agencies.

Teaching Credentials

A bachelor's degree in Black Studies is an acceptable major for entry into a Single Subject (secondary) or Multiple Subject (elementary) Credential Program.

Students completing this degree, who plan to teach at the secondary level in California, should apply to the Single Subject Credential Program in the area of Social Sciences. The State of California requires that credential candidates demonstrate their subject matter competency in this teaching area. Subject matter competency can be established in one of two ways: either by passing the National Teachers Examination in this teaching area or by completing a State approved program. (The approved program consists of selected course work included in the degree program.) Students should consult with department advisors, or advisors in the Graduate School of Education about courses which, when completed, eliminate the need for taking the National Teachers Examination.

Students who wish to pursue a Multiple Subject (elementary) Teaching Credential are advised that the State of California requires that students complete either a Diversified Program (see details in section J of the catalogue), or pass the National Teachers Examination (Common Examination). It is quite feasible for students to complete a de-

gree major and to simultaneously fulfill the requirements for the Diversified Program.

Admission to credential programs at UCSB also requires certain prerequisites. The following chart identifies these requirements.

	English 106	Ergonomics 109	Mathematics 100 A & B	Pre-Professional Experience
Multiple Subject Program	X	X	X	X
Single Subject Program	X	X		X

Correspondence information

Department of Black Studies, South Hall, Room 3631.
University of California, Santa Barbara, California
93106. Phone: (805) 961-3800, 961-3847.

Black Studies
Lower Division courses

1A • Introduction to the Cultures and Peoples of African Heritage: The United States of America (4) Staff [E2]
Part one of a three quarter sequence required as preparation for the major in Black Studies. Its specific focus is the United States and its objective is to acquaint the beginning student, mainly freshmen, with the historical and current social condition of Black people in North America

1B • Introduction to the Cultures and Peoples of African Heritage: Latin America and the Caribbean (4) Pigeon [E2]
Part two of a three quarter sequence required as preparation for the major in Black Studies. The history of Black peoples in Latin countries and in the Caribbean will be surveyed. Attention will be given to the differential adaptations made and the different levels of prosperity and influence achieved by Black people in this area of the world.

1C • Introduction to the Cultures and Peoples of African Heritage: The African Continent (4) [E2]
Part three of three quarter sequence required as preparation for the major in Black Studies. Selected areas of the African Continent will be the focus of detailed discussion and exploration. Particular attention will be given to those areas which were the sources of Black population in the "new world." Both the African past and contemporary Africa will be dealt with.

2 • Group Exploration of Racism (2)
Group discussions designed to explore, identify and understand the social and emotional pathology of racist orientations as they appear in everyday life. Discussions will focus on examinations of personal experiences, and extensive personal involvement and participation are expected. Not restricted to majors in Black Studies. Limited enrollment.

3A • Yoruba Language I (4)
Yoruba I. Introduction to Yoruba. Elementary Yoruba offers the knowledge of vocabulary and pronunciation and elementary conversation.

3B • Yoruba Language II (4)
Yoruba II. The study of Yoruba grammar. Intermediate conversation, readings and essays are stressed.

3C • Yoruba Language III (4)
Yoruba III. The study of Yoruba literature, poems, plays and proverbs.

3E • The Afro-American Culture Experience Through Literature (3) Pigeon [D]
A colloquium which examines themes and perspectives in Afro-American culture as embodied in various forms of original slave narratives. Limited enrollment.

48 • Workshop: Writing and the Afro-American Experience (4) St. Omer [D]
Prerequisite: Consent of the instructor
The workshop is designed to give students an opportunity to write poetry and fiction according to their own interests. Students are required to read their work and subject it to critical appraisal, and to discuss craft, particularly as it operates within the Black American experience. (One hour for lecture and three hours for discussion.) Limited enrollment.

Upper Division courses

100 • The Social Institution of Communication (4) [D]
This course is designed to offer the student a basic conceptual framework for analyzing the role of communication and initiating goal-oriented action within the Afro-American community

101 • Black Legislators and Elected Officials in North America (4) Staff [E2]
Prerequisite: Upper Division standing or consent of instructor.
This course is designed to acquaint the student with the peculiar problems of access to, and

incumbency in, political office for the Black American. The distinctive vantage point of the Black legislator on major current social problems and issues will be critically examined and explored. Extensive use will be made of visiting legislators and elected officials. Both historical and comparative analysis will be emphasized.

102 • Black Radicals and the Radical Tradition (4) Staff [E2]
Prerequisite: Upper Division standing or consent of instructor.
This course will examine the tradition of radical thought and the relevance of this thought to the needs and interests of the Black community. Several hypotheses related to radical thought will be formulated and analyzed in light of current events. In addition the lives and works of individual Black Americans who fall in this tradition will be discussed.

103 • The Politics of Black Liberation (4) [E2]
This course seeks to provide an empirical and systematic explanation of the Black Liberation Movement in America. Emphasis will be placed on the concept of Black Power, the theories and current trends relating to the development of more extensive and effective control of those institutions that influence the lives and destinies of Black people.

104 • Political Action in the Black Community (4) Staff [E2]
An examination of actions and reactions of Black elected officials (in California) to public issues having particular relevance to the Black community and the techniques and procedures adopted by the elected officials in response to community demands on these issues.

105 • An Introduction to African Nationalism (4) [E2]
An introduction to African Nationalism through comparative study of African Cultures.

107 • Ecological Perspectives in African Development (4) [E2]
An examination of the physical and natural deter-

minants of Africa, and their relations to famine, economic development, communication and the survival of the animal kingdom. This course will also provide insight into the physical constraints of the African Environment as they relate to economic productivity and the need for the preservation of life.

110 • Economic Theory, Practice and the Social Condition of the Black American (4) Staff [E2]

Prerequisite: Upper Division standing or consent of instructor.

This course deals with national economic policy, the theory by which it is guided, and the manner in which this policy moulds the social condition of the Black American. Some attention will be given to the tradition in economic thought from which our national policy making derives.

112A-Z • Mini Course Seminars in Writing (2) Staff

A series of three hour seminars by prominent Black writers and publishers, national and international, in eight or more categories: fiction, poetry, drama, screen-writing, review/criticism, essays, journalism and social science. For each workshop, there will be a three-person instruction team: a professor, a professional editor, and a professional writer. The students' work will be evaluated by a panel of publishers.

113 • African Mythology and Religion (4) [D]

The study of the mythical world of the African peoples and their original religious beliefs in life, death, and reincarnation. This course will acquaint students with the background of African culture and the spiritual forces which constitute the source of African conduct and behavior. Related political forms, artistic values, and religious rituals will also be examined.

114A • History of Jazz (4) Staff [C]

This course will focus on the growth of jazz and its emergence as a distinctive form through related styles as work songs, blues and gospel music from the era of the 20's through the 60's. Jazz artists will be invited to perform. Students must be conversant with musical terminology.

114B • Ethnography of the Blues (4) Staff [C]

A historical survey of blues styles applying the two basic types of 12 bar blues musical sentences and their six transformations to reserve tapes of recorded blues. Analysis of song-texts; role and status of blues musicians; and new developments in contemporary popular music which have their roots in the blues will be explored. One field research project will also be required.

115 • African Philosophy (4) [D]

Prerequisite: Upper Division standing or consent of instructor.

An examination of the philosophy of African peoples and its influence on religious, moral, and customary ideas and practices.

119 • Advanced Group Exploration of Racism (4) [E2]

Prerequisite: Upper Division standing or consent of instructor.

Like Black Studies 2, this course will explore the identity and understanding of the social and emotional pathology of racist orientations. How-

ever, the course will dwell more specifically on the problem and cause of racist pathology, both from an individual perspective and from an institutional perspective. Limited Enrollment.

120 • Social Psychology of Racism (4) [E2]

Prerequisite: Upper Division standing or consent of instructor.

This course will examine the effects of prejudice and discrimination on the victims of racism. The social sources of racist attitudes and practices of racial discrimination will be examined, as well as the effect of these attitudes and practices on personal growth and development. Relevant research studies will be used and a comparative emphasis taken in the course.

121 • The Black Family in the United States (4) [E2]

As one of the oldest institutions in the Black experience, no curriculum would be complete without an understanding of Black family life in the United States. Traditionally treated as a deviant form of "mainstream" American life style, the Black family has rarely been analyzed outside of this context until recently. This shift in attention has made the study of the dynamics of Black family life a major focal point in the larger study of the Black experience in the United States.

122 • Creative Teaching and the Black Child (4)

This course will analyze some of the identifiable problems in the education of the Black child and explore some of the more creative and innovative teaching and classroom methods being presently employed to assist Black youngsters in adjusting to the school's environment and thereby making the educational process a more human rewarding and fulfilling learning experience.

124 • Religion in Black America (4) [D]

This course of study is designed to provide a historical survey of major Black religious figures, organizations, movements, philosophies and issues. Emphasis will be placed on modern and contemporary religious phenomena in the Black religious community of the United States. The approach will be critical and comparative as exemplified in the required texts.

125 • Blacks and American Popular Culture (4) Daniels [E2]

A study of the contributions of Afro-Americans and their impact upon popular culture and life in the U.S. through an examination of minstrelsy, music—ragtime, jazz, blues, rock and roll, popular dance—films, athletics and popular novels.

126 • Black Urban History (4) Daniels [E2]

An analysis of the urban dimension of Black history. In addition to the colonial setting, we shall focus on the modern urban life of Afro-Americans, their work, neighborhood locations, recreation, and contributions, examining in detail five specific cities.

128 • Oral Tradition of the Afro-American Culture (4) Pigeon [D]

This course is designed to acquaint the student with the oral traditions of Afro-American culture as expressed in Black idioms and folklore.

129 • Myth and Symbolism in Afro-American Literature (4) Staff [D]

This course will explore the development of the mythic and symbolic imagination in some of the major works of Afro-American writers.

130A • French Literature and Literary Figures (4) Pigeon [D]

Prerequisite: Upper Division standing or consent of instructor.

History of French African Literature with emphasis on its development in Africa and in the West Indies. The class will study the concept of negritude from its birth to the present. Among the writers whose work will be studied are: Birago Diop, Aime Cesaire, Frantz Fanon, Albert Memmi, Leopold Sedar Senghor. A reading knowledge of French will be helpful.

130B • French African Literature After The Independence (4) Pigeon [D]

Prerequisite: Upper Division standing or consent of instructor.

This class will acquaint the student with the new ideologies and tendencies which appear *After The Independence on the African Soil* and simultaneously in the *French West Indies*. Among the writers whose works will be studied are: Mongo Beti, Olympe Bhely Guenun, Camara Laye, Aime Cesaire, Charles Nokan, Ferdinand Oyono.

132 • Seminar in Afro-American Literature (4) St. Omer [D]

A comparative analysis of the different creative visions in Afro-American Literature. Selected authors and their work will be read intensely and students will prepare imaginative manuscripts based on the techniques of those writers. Upper division standing only.

133A • Introduction to West Indian Literature (4) Pigeon [D]

Prerequisites: Upper Division standing or consent of instructor.

This course will deal with the work of West Indian poets from the French speaking islands of the West Indies. It will thus deal with the development of poetry in Haiti, Guadeloupe, Martinique with a brief escape to French Guyana.

133B • Introduction to West Indian Literature (4) Pigeon [D]

Prerequisites: Upper Division standing or consent of instructor.

This course will deal with the work of West Indian poets from the Spanish speaking Islands of the West Indies. It will thus deal with the development of poetry in Cuba and Puerto Rico.

133C • Introduction to West Indian Literature (4) St. Omer [D]

Prerequisites: Upper Division standing or consent of instructor.

This course will deal with the work of West Indian poets from the English speaking islands of the West Indies. It will thus deal with the development of poetry in Jamaica and Trinidad.

134 • Seminar on Aime Cesaire (4) Pigeon [D]

Prerequisite: Upper Division standing or consent of instructor.

This course will be an in-depth study of plays, novel, poetry, and political treatises of this renowned Martiniquais writer. The student will have to analyze and possibly act in plays like: The Tragedy of King Christopher, A Season in the Congo, The Tempest, the novel, Return to My

Native Land, and the Political Letter of Maurice Thorez. Also, his speech on Colonialism will be analyzed.

135A-Z • Special Topics in African Literature: Africa in Black and White (4) St. Omer [D]

Reflections of African society in fiction by Europeans and Africans of both races. Among the writers whose works will be studied are Chinua Achebe, Peter Abrahams, Nadine Gardiner, Doris Lessing, Joseph Conrad, Graham Greene, Andre Gide, Wole Soyinka, Ferdinand Oyono, Ayi Dwei Armah, Alex La Guma, Ezekiel Mphahlele, Olive Schreiner, Evelyn Waugh, Joyce Cary and James Ngugi.

140 • Ethnomusicology (4) Staff [C]

Prerequisites: Upper Division standing or consent of instructor.

The development of music in non-European cultures will familiarize the student with the ethnic origins of music in the Caribbean; describe the historical development of this music, and analyze the aspects of it which derive from the African, Afro-American, and Latin American peoples. This course can satisfy four units of the general education requirement in Fine Arts.

141 • History of Soul Music (4) Staff [C]

A survey course of soul music for the non-music major from 1945 to the present. Analysis of song-texts, role and status of musicians, and basic styles will be covered. Students will be taught to discern musical elements as melodic contour, rhythm, texture, medium, tempo, and various forms employed in the music.

142 • Music in Afro-American Culture: U.S.A. (4) [C]

An introduction to the music of Afro-Americans in the U.S.A. from the antebellum era to the present. The course will cover folk, religious, popular and classical music forms. The sociology of Black music in America will form the basis for class lectures and discussions.

160A • Analyses of the Racist Experience (4) Staff [E2]

Using the Jewish, Black and minority group experiences, the course will seek to offer historical

perspectives for a contemporary related analysis

160B • White Racism and the African Continent (4) [E2]

A survey course examining the white man's self-image in Africa. The consequences of colonialism leading to the contemporary experience of white racism, especially in Southern Africa, will be reviewed. Special attention will be given to apartheid and the Portuguese territories.

160C • The African Liberation Movements (4) [E2]

The African reaction to the experience of colonialism and apartheid. A survey of African revolutionary movements with special emphasis on contemporary issues. The course will emphasize the theoretical as well as the practical bases of African revolutionary movements.

195A • Community Involvement (4)

Prerequisite: Consent of the department.

This is a field study course designed to acquaint the student with correctional facilities, civic agencies and community organizations and their functions. Special emphasis will be devoted to the Black community and those organizations in the broader community that directly affect its welfare.

195B • Community Involvement (4)

Prerequisite: Consent of the department.

This field study course will provide students an opportunity for an in-depth exploration of community agencies and organizations. Students will be able to participate in authorized programs of several correctional facilities.

196 • Bibliographic Methods in Black Research (4) Staff

Prerequisite: Upper Division standing

This course will acquaint students with the methods of obtaining information on the Black experience, utilizing written, multi-media and other sources, with emphasis on Afro-American materials. Black resource materials found in catalogs, indexes, bibliographies and oral history will also be used. The course will cover Africa, the Caribbean and other parts of the diaspora.

197 • Field Research (4) Staff

Prerequisite: Upper Division standing or consent of instructor.

This course is designed to acquaint students with the actuality of selected aspects of the Black American experience. Selected areas of the local community will be the focus of research attention in the course. Relevant research of this experience will be required of each student. Open only to students who have completed lower division course requirements.

***198 • Senior Seminar (4)** Staff

Prerequisite: Upper Division standing or consent of instructor.

Enrollment limited. Reading and discussion will be centered around a single topic or problem to be announced in advance by the instructor.

***199 • Independent Studies in Black Studies (1-5)** Staff

Prerequisite: Senior standing. Admission by special permission of the department only. 199 courses are limited to not more than five units in one quarter and no more than 12 units total.

Graduate Courses

205 • Methodology of Black Culture (4)

Prerequisites: B. A. Degree

This course is to acquaint the student with the concepts, theories, norms, world-view, theses, laws, etc. which the mind has to follow to arrive at the validity of Black cultural expressions.

596 • Directed Reading and Research (2-5) Staff

Individual tutorial. Plan of study must be approved by department chairperson. May be repeated for credit on approval of chairperson.

598 • Master's Thesis Research and Preparation (2-8) Pigeon, St. Omer.

To assist Graduate Students who are majoring in African Area Studies and Black Studies in preparing their master's thesis.

*See M-2 for 198/ 199 independent studies unit limitations.

Chemistry

Professors

- Michael T. Bowers, Ph.D., *University of Illinois; physical chemistry.*
- Thomas C. Bruice, Ph.D., *University of Southern California; bio-organic chemistry.*
- Clifford A. Bunton, Ph.D., *University College (London); organic chemistry.*
- ³Peter C. Ford, Ph.D., *Yale University; inorganic chemistry.*
- J. Thomas C. Gerig, Ph.D., *Brown University; bio-organic chemistry.*
- David O. Harris, Ph.D., *UC Berkeley; physical chemistry (Chairperson).*
- Joseph O. Hirschfelder, Ph.D., *Princeton University; theoretical physical chemistry (Adjunct).*
- Arthur T. Hubbard, Ph.D., *California Institute of Technology; inorganic-analytical chemistry.*
- William C. Kaska, Ph.D., *University of Michigan; inorganic chemistry.*
- ⁴John H. Kennedy, Ph.D., *Harvard University; inorganic-analytical chemistry.*
- Bernard Kirtman, Ph.D., *Harvard University; theoretical physical chemistry.*
- Richard M. Martin, Ph.D., *University of Wisconsin; physical chemistry.*
- Horia I. Metiu, Ph.D., *Massachusetts Institute of Technology; theoretical physical chemistry.*
- Glenn H. Miller, Ph.D., *Brown University; polymer chemistry.*
- Roger C. Millikan, Ph.D., *UC Berkeley; physical chemistry.*
- Henry W. Offen, Ph.D., *UC Los Angeles; physical chemistry.*
- William E. Palke, Ph.D., *Harvard University; theoretical physical chemistry.*
- R.G. Pearson, Ph.D., *Northwestern University; inorganic-physical chemistry.*
- ²Glyn O. Pritchard, Ph.D., *Manchester University (England); physical chemistry.*
- Bruce F. Rickborn, Ph.D., *UC Los Angeles; organic chemistry.*

Associate Professors

- Curtis B. Anderson, Ph.D., *UC Los Angeles; organic chemistry.*
- Donald H. Aue, Ph.D., *Cornell University; organic chemistry.*
- Thomas M. Hooker, Jr., Ph.D., *Duke University; bio-physical chemistry.*
- Stanley M. Parsons, Ph.D., *California institute of Technology; biological chemistry.*
- Daniel L. Purich, Ph.D., *Iowa State University; biological chemistry.*
- ⁴Richard J. Watts, Ph.D., *University of Colorado; inorganic chemistry.*

Assistant Professors

- Bruce Lipshutz, Ph.D., *Yale University; organic chemistry.*
- R. Daniel Little, Ph.D., *University of Wisconsin; organic chemistry.*

Lecturer

- Paula Yurkanis, Ph.D., *University of Virginia; bio-organic chemistry.*

Professors Emeriti

- Ernest L. Bickerdike, Ph.D., *University of Southern California.*
- Pierce W. Selwood, Ph.D., *University of Illinois.*

¹Absent on leave, Fall '80

²Absent on leave, Fall '80 and Winter '81

³Absent on leave, Winter and Spring '81

⁴Absent on leave 1980-81

Concerns of the department

The curricula in chemistry provide excellent undergraduate preparation for careers in chemical research and teaching, medicine, environmental and industrial law, technical management, and environmental fields. The department offers programs leading to either the B.A. or B.S. degree. Both of these bachelor degree programs may meet the standards recommended by the American Chemical Society for professional education in chemistry. The B.S. degree is recommended for students planning professional careers in chemistry, whereas the B.A. degree may be more suitable for students with other career goals.

A Willard L. McRary Prize in Chemistry is given to a graduating senior whose attainment in chemistry is outstanding and reflects the promise of high quality scientific attainment, such as that which characterized the career of Professor McRary.

For more detailed descriptions of the specific undergraduate programs, and the graduate programs with emphasis in Chemistry, please see the details which are given below.

Departmental Advising

Each entering student will be assigned an adviser who may be consulted on any matter pertaining to the student's University work. The adviser should approve the student's program. Waivers and substitutions of chemistry requirements must be discussed with the adviser.

Bachelor of Arts

General Education

Students in the Bachelor of Arts program in chemistry must

fulfill all of the General Education requirements for this degree as described section **M** of this catalog. The courses which are required in preparation for the chemistry major will automatically satisfy Area B, Natural Science and Mathematics, in the General Education program for the B.A. or B.S. degree.

Preparation for the major

Required: Chemistry 1A—B—C; 1AL—BL—CL; 6A—B; Math 3A—B—C or 34A—B—C or 12 units of 3S or 8 units of 34S and 34C; Physics 1, 2, 3, 4, 3L, 4L, or Physics 6A—B—C; 6AL—BL—CL.

A reading knowledge of a foreign language (German is particularly useful) is strongly recommended for students planning advanced study in science. However, it is not required for undergraduate professional education in chemistry.

Upper Division Major

Required: 36-38 upper division units including Chemistry 130A—B—C; 113A—B—C; 114A or B; 150, 150L; 173A or B. One chemistry elective course (at least 3 units) is required to complete the major. Chemistry 8A—B—C may be substituted for Chemistry 130A—B—C, but an additional 10 upper division units in Chemistry including at least one organic chemistry course (not 130A) must be taken to satisfy upper division unit requirements. The student should consult a Chemistry Department adviser regarding these additional units or any other possible substitutions. The senior adviser approves the chemistry elective units for graduation as well as waivers or substitutions of requirements. A student who has transferred from another school should consult the appropriate adviser as soon as possible after arrival.

Transfer students who receive subject credit for Chemistry 130 and/or 150 because they completed equivalent lower division courses elsewhere are reminded that they must earn at least 36 upper division units in Chemistry in spite of the substitution.

The BA degree in Chemistry will meet the standards recommended by the American Chemical Society for professional education in Chemistry provided the student completes an additional three courses in Chemistry, including two laboratory courses (Chemistry 6C may be used for partial fulfillment of this requirement). The student should consult the senior adviser in regard to ACS certified degrees.

Bachelor of Science

General Education

See the College of Letters and Science (Chapter M) for the general education requirements for the Bachelor of Science degree.

Preparation for the major

Required: Chemistry 1A—B—C; 1AL—BL—CL; 6A—B—C; Math 3A—B—C or 12 units of 3S; 5A—B; Physics 1, 2, 3, 4, 3L, 4L.

A reading knowledge of a foreign language (German is

particularly useful) is strongly recommended for students planning advanced study in science. However, it is not required for undergraduate professional education in chemistry.

Upper Division major

Required: 53 upper division units including Chemistry 130A—B—C; 113A—B—C; 114A—B; 150, 150L; 173AB.

Additional courses to complete the major in chemistry will be taken by the student after individual consultation with the adviser. A minimum of 12 additional units will be taken, normally including two physical chemistry courses, one organic or biological chemistry course, and one upper division laboratory course. Some of these units may be taken in other departments. Juniors and seniors should consult the junior or senior adviser respectively. The senior adviser approves the chemistry elective units for graduation as well as waivers or substitutions of requirements. A student who has transferred from another school should consult the appropriate adviser as soon as possible after arrival.

Transfer students who receive subject credit for Chemistry 130 and/or 150 because they completed equivalent lower division courses elsewhere are reminded that they must earn at least 44 upper division units in Chemistry in spite of the substitution.

Cooperative program—Chemistry and Chemical Engineering

Chemistry students who are interested in an industrial career are advised to consider a five-year program leading to B.S. degrees in both Chemical Engineering and Chemistry. Students in the cooperative program, which requires simultaneous registration in the Colleges of Letters and Science and Engineering, are responsible for the completion of all degree requirements for each college. Chemistry requirements for the degree include: Chemistry 1A—B—C, 1AL—BL—CL, 6A—B—C, 130A—B—C, 150, 150L, 113B—C, 114A or B, 173A or B and two additional upper division courses in Chemistry. Math 3A—B—C, 5A—B—C and Physics 1, 2, 3, 4, 3L, 4L are also required. Students may obtain more details of the program from the Department of Chemistry or the Department of Chemical and Nuclear Engineering. Final admission to the program is subject to the approval of the dean of each college.

Suggested course schedule for Freshmen (B.S. or B.A.)

1st Quarter		2nd Quarter		3rd Quarter	
Units	Course	Units	Course	Units	Course
4	Chem 1A-1AL	4	Chem 1B-1BL	4	Chem 1C-1CL
4	Math 3A	4	Math 3B	4	Math 3C
4	English 1A	4	English 1B	—	Gen. Education
—	Gen. Education	—	Gen. Education	—	Elective

Master of Arts

See the publication issued by the Graduate Division entitled "Graduate Division Announcement" for admission

and degree requirements.

The M.A. may be obtained in any of the specialized fields of Physical Chemistry, Bio-Organic, Organic and Inorganic Chemistry.

1. The M.A. in chemistry may be attained under either Plan 1 (thesis based on research) or Plan II (examination).

2. Experience as a teaching assistant is required before the M.A. degree will be granted.

Doctor of Philosophy

See the publication issued by the Graduate Division entitled "Graduate Division Announcement" for admission and degree requirements.

The Ph.D. may be obtained in any one of the special fields of Physical Chemistry, Bio-Organic, Organic and Inorganic Chemistry.

1. There is no formal unit requirement for the Ph.D. in addition to courses within the area of specialization, the candidate will normally take at least one advanced course in each of two areas outside his field.

2. Progress toward the degree is followed by a series of cumulative examinations in the field of specialization.

3. Experience as a teaching assistant is required before the Ph.D. degree will be granted.

The B. R. Baker Memorial Fellowships in Chemistry

These awarded to graduate students in the Department of Chemistry who have given strong indication by their graduate or undergraduate records that they will make continued and substantial contributions to the progress of organic, medicinal or biological chemistry.

A John H. Tokuyama Memorial Loan Fund is available specifically for graduate chemistry students at UCSB administered as short-term or emergency loans.

Cooperative program

Graduate Studies in Biochemistry and Molecular Biology: This program is sponsored jointly by the Departments of Chemistry and Biological Sciences. Details are listed under Biochemistry and Molecular Biology.

Career opportunities

See "Concerns of the Department" section.

Teaching credentials

A bachelor's degree in Chemistry is an acceptable major

for entry into a Single Subject (secondary) or Multiple Subject (elementary) Credential Program.

Students completing this degree, who plan to teach at the secondary level in California, should apply to the Single Subject Credential Program in the area of Physical Science. The State of California requires that credential candidates demonstrate their subject matter competency in this teaching area. Subject matter competency can be established in one of two ways: either by passing the National Teachers Examination in this teaching area or by completing a State approved program. (The approved program consists of selected course work included in the degree program.) Students should consult with department advisers, or advisers in the Graduate School of Education about courses which, when completed, eliminate the need for taking the National Teachers Examination.

Students who wish to pursue a Multiple Subject (elementary) Teaching Credential are advised that the State of California requires that students complete either a Liberal Studies program (see details in section J of the catalogue), or pass the National Teachers Examination (Common Examination). It is quite feasible for students to complete a degree major and to simultaneously fulfill the requirements for the Liberal Studies program.

Admission to credential programs at UCSB also requires certain prerequisites. The following chart identifies these requirements.

	English 106	Ergonomics 109	Mathematics 100 A & B	Pre-Professional Experience
Multiple Subject Program	X	X	X	X
Single Subject Program	X	X		X

Consult with the department credential adviser, Mr. Glenn H. Miller, for specific departmental requirements.

Specific details of State and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office. (See inside back cover for address.)

Correspondence information

Department of Chemistry, Chemistry Building, Room 1005, University of California, Santa Barbara, California 93106. Phone: (805) 961-2931.

Chemistry

Lower Division courses

1A—B—C • General Chemistry (3-3-3) Staff [B1]

Prerequisites: one year of high school algebra and exponents and logarithms. Lecture, three hours. High school chemistry and physics are strongly recommended. Concurrent registration in 1AL, 1BL, 1CL is required, or consent of instructor.

Chemistry 1 develops a quantitative understanding of matter providing a basis for all fields

of science and also for understanding industrial technology and environmental problems. This course is required for majors in chemistry and most other fields of science and engineering, but it can also provide a general education in science for the liberal arts student.

A: Stoichiometry, gas laws and kinetic theory, atomic and molecular structure, the periodic table, nature of solids, liquids, and solutions, phase equilibria.

B: Thermodynamics (1st and 2nd Laws), reaction kinetics, thermochemistry, oxidation and reduction, electrochemistry, chemical equilibrium.

C: Structure and dynamics of the elements and their compounds. Aspects of technology and environmental problems.

1AL—BL—CL • General Chemistry Laboratory (1-1-1) Staff

Prerequisite: Concurrent registration in 1A—B—C or consent of instructor. Laboratory, four hours.

Quantitative measurements demonstrating principles and developing laboratory technique. Inorganic qualitative analysis. Inorganic synthesis.

Contemporary Natural Science (Natural Science 1A—B—C) (4-4-4) Staff [B1]

Sequence beginning I. For course description see Natural Science listing.

6A—B—C • Laboratory Methods of Organic Chemistry (2-2-2) Staff

Prerequisite: for 6A: *Chemistry 130A or 8A (may be taken concurrently)*. Students whose requirements include only 6A and 6B are urged to take 6A in the winter quarter. Chemistry 6A: lecture, one hour; laboratory, four hours. Chemistry 6B—C: laboratory, eight hours.

Distillation, crystallization, extraction, determination of physical properties, organic synthesis, identification of organic compounds, instrumental methods in organic chemistry.

8A—B—C • Fundamentals of Organic Chemistry (3-3-3) Purich, Parsons, Yurkanis [B1]

Prerequisite: *Chemistry 1A—B—C or consent of instructor*. Lecture, three hours.

Structure and reactivity of organic compounds including nomenclature, isomerism, spectroscopy, catalysis, reaction mechanisms and stereochemistry. Application of the principles of organic chemistry to biochemical systems—carbohydrates, proteins, enzymes, vitamins and cofactors. Designed primarily for biological science majors.

20 • Science and Society (3) Kirtman [B2]

Lecture, two hours; Discussion, 1 hour.

The role of science and technology in society as exemplified by the arms race, environmental pollution, etc., is traced from the birth of modern science through the big expansion associated with World War II and culminating in the technological-social crisis of today. Applicable only to the B-2 area of General Education requirements. Not offered every year.

25 • Introductory Chemistry (4) Staff [B1]

Lecture, four hours.

This course is designed to meet the non-science major's general education requirement in the physical sciences. The course may also serve as background preparation for Chemistry 1A. The course includes such basic topics as Atomic Theory, Weight Relations, Nomenclature, Chemical Bonding, Kinetic Molecular Theory, Gas Laws, Solutions, and related areas of modern chemistry. (Not open to students who have completed Natural Science 1B.)

90FS • Freshman Seminar (2) Miller, Anderson, Kennedy, Hooker

Seminar, two hours. Informal discussion limited to 10 students in each section. Each participating faculty member will conduct one section. Subjects will include current technological and environmental problems, and recent advances in basic and applied chemistry.

91 • Undergraduate Seminar (1) Staff

Prerequisite: *Chemistry 1A—B or concurrent registration*. Seminars for undergraduates presented by faculty and/or students. May be repeated once for credit.

99 • Introduction to Research (1-3) Staff

Prerequisite: *Consent of Instructor and Undergraduate Advisor*. Directed study, normally experimental, to be arranged with individual faculty members. Course offers exceptional students an opportunity to participate in a research group.

The student will learn basic techniques and the operation of instruments used in research. The course may be repeated to a maximum of six units.

Each faculty member has a unique letter designation which is the same as for the 594-599 series

Upper Division courses**101. Problems in Environmental Chemistry** (3) Staff [B1]

Prerequisite: *ES 12 and 115 or one of the following: Chemistry 1B, Chemistry 25, or Natural Science 1B*. Lecture, three hours. The chemistry of air, water, and soil pollution: sources and methods of control; chemical dynamics in the environment; chemical and instrumental methods of analytical pollution monitoring; chemical quality standards and their maintenance.

Open to Chemistry majors for credit but cannot be used to satisfy required Chemistry electives.

113A—B—C • Physical Chemistry (4-4-4) Bowers, Martin, Millikan, Palke, Pearson [B1]

Prerequisite: *Chemistry 1A&B—C, Mathematics 3A—B—C, and Physics 6, 7 or 8, or by consent of instructor*.

Lecture, three hours; Discussion, one hour. A: Chemical thermodynamics: laws of thermodynamics, phase equilibria, chemical equilibria, equations of state. B: Quantum theory and spectroscopy: Introduction to quantum mechanics; symmetry, molecular structure and spectroscopy. C: Kinetic theory of gases, chemical kinetics, statistical mechanics, photochemistry.

113AG—BG—CG. Physical Chemistry (4-4-4) Bowers, Martin, Millikan, Palke, Pearson

Open only by consent of the Chemistry Graduate Advisor to graduate students who have not taken 113A—B—C or the respective part thereof in this institution. Lecture, three hours.

114A—B • Physical Chemistry Laboratory (3-3) Bowers, Martin [B1]

Prerequisite: *Chemistry 150, 150L or equivalent, Chemistry 113A concurrently with Chemistry 113B*. Lecture, one hour; Laboratory, eight hours.

Lecture: treatment of experimental data, error analysis, instrumental data acquisition techniques, special topics.

Laboratory: Experiments and reports involving physical properties of gases, thermochemistry, solutions, phase equilibria, chemical kinetics, surface phenomena, molecular electric and magnetic properties, molecular spectra and structure, properties of solids, computer data analysis.

115A—B—C • Fundamentals of Quantum Chemistry (3-3-3) Palke, Millikan, Kirtman [B1]

Prerequisites: *Chemistry 113A—B—C, Mathematics 5A or consent of Instructor*. Lecture, three hours.

A: Introduction to Quantum Mechanics-Postulatory Approach; particle in box, on ring, harmonic oscillator; linear operator theory, matrix algebra, hydrogen atom; perturbation theory, variation theory; applications.

B: Molecular orbital theory and valence bond theory; Huckel theory (secular equn.) applications to conjugated systems, electronic spectra, and term symbols; introduction to infrared, Raman, and microwave spectroscopy.

C: Introduction to NMR, EPR, Group Theory; applications.

115AG—BG—CG. Fundamentals of Quantum Chemistry (3-3-3) Millikan, Palke, Kirtman

Prerequisite: *Open only by consent of the Chemistry Graduate Advisor to graduate students who have not taken 115A—B—C in this institution*. Lecture three hours.

117 • Statistical Thermodynamics. (3) Offen, Palke, Metiu [B1]

Prerequisite: *Chemistry 113A—B—C or consent of instructor*. Lecture, three hours.

Fundamentals of statistical thermodynamics, partition functions for ideal gases and crystals, quantum statistics, calculations of thermodynamic properties.

117G • Statistical Thermodynamics (3) Offen, Palke, Metiu

Prerequisite: *Open only by consent of the Chemistry Graduate Advisor to graduate students who have not taken 117 at this institution*. Lecture, three hours.

118 • Photochemistry and Radiation Chemistry (3) Martin, Millikan, Offen [B1]

Prerequisite: *Chemistry 113B*. Lecture, three hours.

Interaction of light and matter, reaction paths from electronically excited molecules, flash photolysis, high energy radiation.

118G • Photochemistry and Radiation Chemistry (3) Martin, Millikan, Offen

Prerequisite: *Open only by consent of the Chemistry Graduate Advisor to graduate students who have not taken 118 at this institution*. Lecture, three hours.

120 • Polymer Chemistry (3) Miller [B1]

Prerequisite: *Chemistry 130A—B—C*. Lecture, three hours.

Mechanism and kinetics of polymerization: Vinyl, condensation, and diene polymers; ionic polymerizations; block and graft polymers; copolymerization; physical chemistry of high polymers; polymer degradations; radiation chemistry of polymer systems

123 • Fundamentals of Environmental Chemistry (3) Millikan, Staff [B1]

Prerequisites: *Chemistry 8A—B, or 130A—B—C, 113 A—B*. Lecture, two hours, discussion, two hours.

Chemical nature of pollution sources. Principles of analytical monitoring and control of pollution sources. The chemistry of pollutants in the environment. Chemical quality standards and chemical monitoring of the environment. Not offered every year

130A—B—C. Organic Chemistry (4-4-4) Organic Staff [B1]

Prerequisite: *Chemistry 1A—B—C, or consent of instructor*. Chemistry 6A—B—C is to be taken concurrently. If student's major does not require 6C, then 6A—B may be deferred to winter or spring quarters. Lecture, three hours.

Structure, reactivity, mechanisms, synthesis, nomenclature and spectroscopic identification of the principal classes of organic compounds as well as organometallics, amino acids, proteins and carbohydrates. This course is intended for chemistry majors and others requiring a strong

basis in organic chemistry (see majors in Biochemistry-Molecular Biology, Chemical Engineering, Pharmacology, Physiology and Cell Biology).

130AG—BG—CG • Organic Chemistry (4-4-4) Organic Staff

Open only by consent of the Chemistry Graduate.

Advisor to graduate students who have not taken 130A—B—C at this institution. Lecture, three hours.

131A—B—C • Advanced Organic Chemistry (3-3-3) Anderson, Bunton, Rickborn, Little, Aue [B1]

Prerequisite: Chemistry 130A—B—C and 113A—B—C, or consent of instructor. Lecture, three hours.

A: Physical organic chemistry-mechanism, stereochemistry, structure and reactivity. **B** and **C:** Mechanism and synthesis in organic chemistry.

131AG—BG—CG • Advanced Organic Chemistry (3-3-3) Anderson, Bunton, Rickborn, Little, Aue

Open only by consent of the Chemistry Graduate Advisor to graduate students who have not taken 131A—B—C in this institution. Lecture, three hours.

134 • Advanced Organic Laboratory (3) Aue, Little [B1]

Prerequisites: Chemistry 130A—B—C and Chemistry 6A—B—C or consent of instructor. Lecture, one hour; laboratory, eight hours.

Methods of organic reactions and synthesis; techniques of product isolation. Not offered every year.

136 • Qualitative Organic Analysis (2) Aue, Little

Prerequisite: Chemistry 130A—B—C and Chemistry 6A—B—C, or consent of instructor. Lecture, 2 hours.

Identification of unknown organic compounds; separation of mixtures; derivatives, instrumental methods; micro techniques.

136L • Qualitative Organic Analysis Laboratory (2) Aue, Little

Prerequisite: Concurrent registration in Chemistry 136. Laboratory, eight hours.

137 • Organometallics in Organic Synthesis (3) Kaska [B1]

Prerequisite: Chemistry 130A—B—C. Lecture, 3 hours.

A study of the synthesis of organic compounds where the starting material or intermediate is a substance having a carbon-metal bond.

141 • Bio-Organic Reactions (3) Bruice [B1]

Prerequisite: Chemistry 130A—B—C, Chemistry 113A—B—C, or consent of instructor. Biology 108 is recommended. Lecture, three hours.

A lecture course in bio-organic mechanisms. The types of chemical transformations of importance in biochemical reactions will be discussed from a physical organic point of view. Mechanisms of nucleophilic displacement reactions on carbonyl and pentavalent phosphorous, hydration reactions, chemical reactions of cofactors, enzymic catalysis and enzyme models are among the topics considered

142A—B—C • Chemical Aspects of Biological Systems (3-3-3) Bruice, Purich and Parsons [B1]

Prerequisite: Chemistry 130C, or consent of instructor. Lecture, three hours.

A: Macromolecules of biological importance. A survey of the physical and chemical properties of proteins, nucleic acids, and carbohydrates. Methods of preparation, chemical synthesis, degradation, and characterization of biomolecules.

B: Chemical aspects of intermediary metabolism. The chemistry and elementary dynamic properties of enzymes; study of enzyme active sites; characterization of metabolic pathways and methods of examining cellular regulation.

C: Macromolecular biosynthesis and specialized cellular processes. A survey of nucleic acid and protein biosynthesis, characterization of lipids and membranes; function of membranes in transport, energy transduction, and cellular control; mechanisms of muscle contraction and cell motility.

142AG—BG—CG • Chemical Aspects of Biological Systems (3-3-3) Bruice, Purich and Parsons

Open only by consent of the Chemistry Graduate Advisor to Graduate students who have not taken 142A—B—C or the respective part thereof in this institution.

150 • Analytical Chemistry (2) Hubbard, Kennedy

Prerequisites: Chemistry 1A—B—C or consent of instructor. Lecture, two hours

Principles of analytical chemistry including classical techniques, spectrophotometry, electroanalytical techniques and separation processes. Library research report.

150L • Analytical Chemistry Laboratory (3) Hubbard, Kennedy [B1]

Prerequisite: Concurrent registration in Chemistry 150 or consent of instructor. Laboratory, eight hours.

Students will perform experiments in several areas of analytical chemistry including gravimetric, volumetric, electroanalytical, spectrophotometric and separation techniques. Analyses of water, blood, consumer products, and industrial alloys are carried out.

151 • Advanced Analytical Chemistry (3) Kennedy [B1]

Prerequisite: Chemistry 150. Lecture, three hours.

A detailed discussion of principles of analytical chemistry with emphasis on acid-base and redox equilibria, and on separation. Not offered every year.

153 • Advanced Analytical Techniques (3) Hubbard [B1]

Prerequisite: Chemistry 150 or consent of instructor. Lecture, two hours; laboratory, three hours.

Principles of analytical methodology, as in spectroscopy, electronanalysis and chromatography. Applications to environmental problems, forensic and clinical analysis, and industry. The laboratory will require the analysis of an environmental sample by two or more methods.

173A—B • Advanced Inorganic Chemistry (3-3) Ford, Kaska [B1]

Prerequisite: Chemistry 113A—B—C or consent of instructor. Lecture, three hours.

A: Inorganic and organometallic chemistry of the nontransition elements and their compounds: descriptive reaction chemistry, bonding theory, stereo-chemistry and introductory spectroscopy. **B:** Inorganic and organometallic chemistry of the transition metals and their complexes: introductory ligand field theory and spectroscopy, descriptive chemistry, and reaction mechanisms.

173AG—BG • Advanced Inorganic Chemistry (3-3) Ford, Kaska

Open only by consent of the Chemistry Graduate Advisor to graduate students who have not taken 173A—B in this institution. Lecture, three hours.

174 • Advanced Inorganic Synthesis and Laboratory Techniques (3) Kaska [B1]

Lecture, 1 hour; Laboratory, eight hours.

Prerequisites: Chemistry 173 (may be taken concurrently) or consent of instructor.

Methods of inorganic synthesis such as the synthesis of transition metal complexes, organometallics, and bioinorganic compounds. Spectroscopic characterization of compounds.

175 • Physical-Inorganic Chemistry (3) Watts, Ford, Pearson [B1]

Prerequisite: 173A—B or consent of instructor. Lecture, three hours.

Bonding theory, thermodynamics, and structure of inorganic compounds. Applications of physical techniques to the study of inorganic (and organometallic) reactions and their mechanisms.

175G • Physical-Inorganic Chemistry (3) Watts, Ford, Pearson

Open only by consent of the Chemistry Graduate Advisor to graduate students who have not taken 175 in this institution. Lecture, three hours.

176 • Inorganic Chemistry of Solar Energy Conversion (3) Ford, Kennedy, Watts [B1]

Prerequisites: Chemistry 113AB. Lecture, three hours.

Survey of applications of basic principles of physical chemistry, photochemistry, and electrochemistry to solar energy conversion processes. Selected systems designed to convert solar energy to chemical fuel, electricity, and heat will be treated in detail during the survey.

176G • Inorganic Chemistry of Solar Energy Conversion (3) Ford, Kennedy, Watts

Prerequisites: Chemistry 113AB. Lecture, three hours.

Survey of applications of basic principles of physical chemistry, photochemistry, and electrochemistry to solar energy conversion processes. Selected systems designed to convert solar energy to chemical fuel, electricity, and heat will be treated in detail during the survey.

184 • Chemical Literature (2) Antony

Lecture, two hours.
Lectures and exercises on the literature and other information resources of use in chemistry.

184G • Chemical Literature (2) Antony

Lecture, two hours.
Lectures and exercises on the literature and other information resources of use in chemistry. *Open only by consent of the Chemistry Graduate*

Advisor to graduate students who have not taken 184 at this institution.

195AA—ZZ • Chemical Instrumentation (3-5) Staff

Prerequisite: Consent of instructor and undergraduate advisor. Discussion, one hour; laboratory six to twelve hours.

With guidance from a faculty member the student will learn advanced laboratory techniques by independent experimental work and weekly consultations with the instructor. This course may be used to satisfy the upper division laboratory requirement. Each faculty member has a unique letter designation which is the same as for the Chemistry 596 series.

196AA—ZZ • Special Courses (1-4) Staff (Kennedy in charge)

To be taken with the consent of the instructor and the undergraduate adviser of the department as a means of meeting special curricular problems. Each faculty member has a unique letter designation which is the same as for the 594—599 series.

***199AA—ZZ • Independent Studies in Chemistry**

(1-5) Staff (Kennedy in charge)

Prerequisites: upper Division standing and consent of both instructor and undergraduate adviser. Directed study, normally experimental, to be arranged with individual faculty members. 199 courses are limited to no more than 5 units in one quarter. Each faculty member has a unique letter designation which is the same as for the 594—599 series.

Graduate courses

212 • Chemical Dynamics (3) Martin, Millikan

Prerequisite: Consent of instructor. Lecture, three hours. Potential energy surfaces, collision dynamics, derivation of reaction-rate expressions, relaxation rates and methods, bimolecular atom-transfer reactions, unimolecular reactions, theory of complex reactions, bimolecular energy transfer.

214A—B • Statistical Mechanics (3-3) Hooker, Metiu

Prerequisite: Consent of instructor. Lecture, three hours.

A: Theoretical basis of classical and quantum statistical mechanics. Maxwell-Boltzmann, Bose-Einstein and Fermi-Dirac statistics. Partition functions. Calculation of thermodynamic properties of ideal systems. **B:** Applications—Diatomic molecules, nuclear spin statistics, polyatomic molecules, solid state, fluctuation theory, imperfect gases, liquids.

215A—B • Principles of Quantum Mechanics (3-3) Kirtman, Palke

Prerequisite: Consent of instructor. Lecture, three hours.

The failures of classical theory. The Schrodinger equation, wave functions, and their interpretation. Free particles and wave packets. Interaction of particle and potentials. Coulomb potential. Harmonic Oscillator. Angular Momentum. Perturbation Theory. Systems of Identical Particles. Time Dependent Perturbation Theory.

*See **N2** for 198/199 independent studies unit limitations.

219 • Selected Topics in Physical Chemistry (1-4) Staff

Prerequisite: Consent of instructor. Lecture, 1-4 hours

A selected topic will be discussed. Course may be repeated with a different topic (18 units maximum).

"Group Theory; Rotational, Vibrational, and Electronic Spectroscopy" Harris

"Physical and Chemical Properties of Surfaces" Hirschfelder

"Properties of Surfaces" Hirschfelder

"Orbital Symmetry Rules for Chemical Reactions" Pearson

230 • Modern instrumental Techniques in Organic Chemistry (3) Staff

Prerequisite: Graduate standing or consent of instructor. Lecture, three hours.

Practical spectroscopy including infra-red and ultraviolet, but with primary emphasis on nuclear magnetic resonance, electron spin resonance, and mass spectroscopy. Not offered every year.

231 • Advanced Physical Organic Chemistry (3) Bunton

Prerequisite: Consent of instructor. Lecture, three hours.

Study of the structural and environmental factors which influence the course of chemical reactions of organic compounds.

233 • Advanced Synthetic Chemistry (3) Aue, Rickborn, Lipshutz

Prerequisite: Consent of instructor. Lecture, three hours.

A comprehensive discussion of modern synthetic organic methods. Including the applications of addition, condensation, substitution and rearrangement reactions. Not offered every year.

236 • Molecular Orbital Theory (3) Staff

Prerequisite: Graduate standing or consent of instructor. Lecture, three hours.

Applications of molecular orbital theory to organic chemistry. Not offered every year.

238 • Selected Topics in Natural Products (3) Lipshutz, Little

Prerequisite: Consent of instructor. Lecture, 3 hours.

Selected topics from Natural Products. The contents of this course will vary. Course may be repeated with different topic. (18 units maximum).

239 • Selected Topics in Organic Chemistry (1-4) Staff

Prerequisite: Consent of instructor. Lecture, three hours.

Selected topics from organic chemistry. The contents of this course will vary. Course may be repeated with different topics (18 units maximum). "Org. Chemistry of Platinum and Palladium Compounds" Anderson/Kaska

"Fourier Transform NMR Spectroscopy: Theory and Practice" Gerig

"Pericyclic Reactions: Theory and Examples" Little

250 • Seminar in Biological Chemistry (2) Staff

Prerequisite: Consent of instructor. Lecture, two hours.

Presentation of seminar in the areas of Biophysical, Bio-Organic, or Biological Chemistry. May be substituted for Chemistry 290 requirement.

252 • Enzyme Dynamics (3) Purich

Prerequisite: Chemistry 142ABC or consent of instructor. Lecture, three hours.

Study of the dynamics of reactions involving biological macromolecules. A kinetic approach to enzyme mechanisms and enzyme-macromolecule interactions.

254A—B • Magnetic Resonance Techniques In Biological Systems (3) Gerig

Prerequisite: Consent of instructor. Lecture, three hours.

A discussion of the theory and practice of magnetic resonance methods currently used in studies of proteins, nucleic acids and polysaccharides both individually and in complex structures such as membranes. NMR and EPR techniques will be included but the emphasis will be on high-resolution ^1H and ^{13}C spectroscopy. Normally offered in alternate years.

255A—B—C • Methods in the Characterization of Biological Macromolecules (3-3-3) Hooker, Gerig

Prerequisite: Physical chemistry, biochemistry, calculus, or consent of instructor. Lecture, two hours; Discussion, one hour.

A: Introduction to biophysical chemistry. Macromolecular structure and conformation, intermolecular interactions, and multiple equilibria.

B: Theory and practice of physical methods employed to study macromolecules. Spectroscopic techniques, including ORD, CD, UV, fluorescence, and phosphorescence, NMR and ESR.

C: Theory and practice of physical methods employed to study macromolecules. Hydrodynamic properties, including sedimentation, diffusion, viscosity, osmotic pressure.

258 • Mechanisms of Organic and Enzymatic Reactions (3) Bruice

Prerequisite: Consent of instructor. Lecture, three hours.

Formal presentation of seminars on recent literature dealing with mechanisms of organic and enzymatic reactions accompanied by open discussion of the topics considered.

259 • Selected Topics in Biological Chemistry (1-4) Staff

Prerequisite: Consent of instructor. Lecture, one to four hours.

Selected topics from Bio-Organic, Biophysical, or Biological Chemistry. The contents of this course will vary. Course may be repeated with a different topic.

"Biochemistry Cholinergic Synapse" Parsons

"Mechanisms of Enzyme Regulation" Purich

260 • Research Seminar in Biochemistry-Molecular Biology (1) Faculty of Biological Sciences and Chemistry.

Prerequisite: Graduate status.

Seminars presented by faculty of the Chemistry Department and the Molecular Biology-Biochemistry Section of Biological Sciences. Current research topics.

261A—B—C • Enzyme Mechanisms (3-3-3) Bruice, Parsons

Prerequisite: Chemistry 142ABC; 252, or consent of instructor. Lecture, three hours.

Presentation of the chemistry, structure, and

function of enzymes followed by discussion of pertinent organic model systems relating to the specific enzymes. Normally offered in alternate years.

273 • Structural Inorganic Chemistry (3) Staff

Prerequisite: Consent of instructor. Lecture, three hours.

Molecular aggregation and structural analysis. Theories of properties and experimental determination of structure; applications to solid state chemistry; heterogeneous catalysis. Not offered every year.

279 • Selected Topics in Inorganic Chemistry (1-4) Staff

Prerequisite: Consent of instructor. Lecture, three hours.

Selected topics from inorganic chemistry. The content of these courses will vary. Course may be repeated with different topics. (18 units maximum)

"Inorganic Photochemistry"	Ford
"Kinetics and Mechanisms of the Reactions of Transition Metal Complexes"	Ford
"Synthetic Transition Metal Organometallic Chemistry and Catalysis"	Kaska
"Structure and Electrical Properties of Ionic Solids"	Kennedy
"Energy Transfer Processes in Transition Metal Complexes: Experimental Techniques and Theoretical Principle"	Watts
"Ligand Field Theory"	Pearson

280 • Selected Topics in Analytical Chemistry (1-4) Staff

Prerequisite: Consent of instructor. Recitation, 3 hours.

Selected topics from analytical chemistry. The content of these courses will vary. Course may be repeated with different topics (16 units maximum). S/U grade.
"Electrochemistry" Hubbard/Kennedy

290 • Seminar in Chemistry (2) Staff

Prerequisite: Consent of instructor. Lecture, one hour.

Presentation of seminar required of all chemistry graduate students. Course may be repeated.

291 • Special Seminar in Chemistry (2) Staff

Prerequisite: Consent of instructor. Lecture, one hour.

Specialized seminar topics. May be repeated.

295A—B—C • Techniques of Teaching and Laboratory Class Supervision (2-2-2)

An initial 2-3 day workshop (295A) is followed by weekly discussions. Topics covered: laboratory organization, supervising experiments, safety, presentations, leading discussions, writing quizzes, advising and grading. Aimed at new teaching assistants. S/U grade.

595AA—595ZZ • Group Studies (2) Staff

Critical review of research in selected fields. Regular meetings are held in which the student pre-

sents for discussion information from the recent chemical literature.

596AA—596ZZ • Directed Reading and Research (2-12) Staff

Individual tutorial. Instructor usually student's major professor. A written proposal for each tutorial must be approved by the Department Chairman and filed with the Graduate Division. No more than half the units necessary for the master's degree may be taken in 596.

597AA—597ZZ • Individual Study for Master's Comprehensive Examinations and Ph.D. Examinations (1-3) Staff

Instructor should be the student's major professor or chairman of his doctoral committee. No unit credit allowed toward advanced degree(s). S/U grade.

598AA—598ZZ • Master's Thesis Research and Preparation (1-12) Staff

Only for research underlying the thesis, writing the thesis. Instructor should be the chairman of the student's thesis committee. No unit credit will be given. S/U grade.

599AA—599ZZ • Ph.D. Dissertation Preparation (1-12) Staff

Only for preparation of the dissertation. Instructor should be the chairman of the student's doctoral committee. S/U grade.

Chicano Studies

Associate Professor

Mario T. Garcia, Ph.D., *UC San Diego; History.*

Assistant Professors

Isidro D. Ortiz, Ph.D., *Stanford University; Political Science*

Ines M. Talamantez, Ph.D., *UC San Diego; Anthropology*

Francisco A. Lomeli, Ph.D., *University of New Mexico; Lit.*

Guadalupe San Miguel, Ph.D., *Stanford University; Education*

Concerns of the Department

The Department of Chicano Studies is engaged in an interdisciplinary program which subjects to critical analysis the Chicano reality in such areas as: psychology, sociology, economics, political science, history, education, linguistics, Spanish, art, drama, and literature.

In seeking to understand the Chicano experience, the program delves into significant periods of Mexican and Southwestern U.S. history including the U.S. Mexican War against Mexico from 1846-48 and the post-Conquest periods from 1848 to the present. To better understand the nature of contemporary Chicano culture, the program

probes still further into the roots of tradition reaching as far back as the pre-Columbian cultures of Mexico, which are part of the broader context of Latin American history and culture.

The interdisciplinary character of the curriculum is an innovative feature of the program. Professionally, this program provides students with an opportunity to pursue an academic major in Chicano Studies. This program is designed to provide systematic instruction for those who wish to pursue concentrated study of the Chicano experience. The program also provides a means for training leaders, both inside and outside the minority communities, to enable them to deal with Chicano affairs and needs. The instructional objectives have a dual purpose: to serve the educational and cultural needs of Chicano communities and to create "awareness" in the Anglo community. The bilingual nature of this program is still another innovation which the Department has stressed. Student involvement in planning and development of the program is also a feature of the Department of Chicano Studies.

Bachelor of Arts - Chicano Studies

Preparation for the Major

Required:

Chicano Studies 1ABC, 12, and Spanish 6 (or equivalent by examination)

Upper Division Major

Required: 40 upper division units emphasizing four sub-areas selected as follows:

A. History - 12 units, including Chicano Studies 168A, B and one course from: Chicano Studies 105, 168Q; History 152B, 156A,B,Q, 161;

B. Humanities - 8 units from: Chicano Studies 142, 180, 181, 186A-B, 188A-B-C, 190; Art 154C, 161C;

C. Social Science - 12 units from the following, including at least 8 units from Chicano Studies: Chicano Studies 115, 120, 140, 141, 144, 150, 164, 170AB, 174, 197; Anthropology 133, 135; Political Science 132, 148A, 165; Sociology 128, 134, 164;

D. Research/Methods - 8 units from: Chicano Studies 110 and one of the following: Chicano Studies 192, 193, 198, 199.

Chicano studies

Lower Division courses

1A-B-C • Introduction to Chicano Studies (4-4-4) Staff [E2]

An introduction to the historical and contemporary development of the Chicano community, interdisciplinary in nature and focusing upon such components as the educational, sociological, and political. The course will critically analyze the societal context in which La Raza has sought to maintain and develop its culture. (F,W,S)

12 • Chicano Spanish Conversation (4) Staff [D]

Prerequisite: Instructor's consent.

Emphasis will be given to the acquisition of oral skills, comparative studies on pronunciation, difficult grammatical idiomatic expressions and Chicano Spanish lexicon.

Upper Division courses

105 • Twentieth Century Chicano History (4) Staff [E2]

A history of the Chicano since 1900, with an emphasis on recent political, economic, and social developments.

110 • Research Methods in Chicano Studies (4) Staff [E-1]

Prerequisites: Chicano Studies 1A-B-C

Using Chicano Studies topics, the course will introduce to: (1) the epistemology of scientific inquiry (its history and contemporary movements); (2) the strengths and weaknesses of quantitative and qualitative methodologies; and, (3) the mechanisms of research design (transforming an idea into a research plan).

115 • Psychological Issues and the Chicano Child (4) Staff [E2]

To give the student an understanding of the fundamentals of psychology; to introduce the fundamentals of child psychology; and to analyze and discuss pertinent psychological principles and research related to the Chicano child. (F,SS)

120 • Bilingualism and the Chicano (4) Staff [D]

Prerequisite: Permission of instructor.

An introduction to the study of bilingualism and the Chicano. The course will focus on the sociolinguistic and educational implications of bilingualism.

121 • Writing Experiences for Bilinguals (4) Staff [D]

Prerequisite: Permission of instructor.

A comparative analysis between Chicano Spanish, Standard Spanish, and vocabulary building.

140 • The Mexican Cultural Heritage of the Chicano (4) Staff [E2]

Prerequisite: Consent of instructor.

A panoramic view of present day Chicano traditions analyzed from a Mexican cultural heritage perspective in order to comprehend and appreciate the uniqueness and difference of present day Chicano culture, its achievements and contribution to the overall American culture.

141 • Chicano- A Cultural Anthropological Perspective (4) Staff [E-2]

Prerequisites: Upper division standing: One or two introductory courses in Sociology and/or Anthropological point of view.

This course will give students a general understanding of the origins, development and contemporary variation in Chicano culture from an Anthropological point of view.

142 • An Introduction to Chicano and Barrio Art (4) Staff [C]

An introduction to Chicano and Barrio Art and its major exponents. This course will emphasize Mexican mural painting as forerunner of Chicano mural art.

144 • The Chicano Community (4) Staff [E2]

Origins of the Chicano in rural Mexico; context of contact; patterns of settlement in the United States; the Chicano community, social structure and social change; acculturation and generational patterns; community leadership and change.

150 • The Evolving Chicana (4) Staff [E2]

An analysis of the role of Chicanas as partici-

Up to 4 units of Chicano Studies 191AA-ZZ may be applied to either Area A or B or C above, as appropriate, by petition. Other upper division courses from other academic departments may be accepted toward the major by petition to the Department chairperson.

Career opportunities

The creation of the Department of Chicano Studies represents the legitimization of the study of the Chicano as a distinct field of study within the College of Letters and Science. The program is designed for students desiring a broadly based education that focuses upon the Chicano experience in a specialized manner. It is especially recommended to those planning careers of special importance for the Chicano community: Education, Law, Medicine, Civil and Social Services, and Bilingual/Cross-Cultural Teaching Credentials.

pants in the history of their people. The course will examine historical and present aspects of Chicana involvement in the labor force, the Chicano and feminist movements. In addition there will be a focus on alternative life styles in a changing culture and society.

164 • Chicanos and the Administration of Justice (4) Staff [E-2]

A survey of police-barrio community relations including the role of police, police deployment theories and tactics, and the unique police problems of the Chicano community. In addition, the course will examine the organization of courts and the procedural issues and suggested reforms involved in the adversary system, from arrest to penal institutions.

168A-B-Q • History of the Chicanos (4-4-4) Garcia [E-2]

The History of the Chicanos, 1821 to the present, traces the social-cultural lifetime of the Mexicans who have lived north of Mexico.

170A • Chicano Community Organizations (4) Staff [E-2]

The day-to-day operations and success of contemporary Chicano community organizations is socio-historically analyzed. Emphasis is placed on whether particular organizations meet the actual or perceived needs of the Chicano community or of special interest groups within the community.

170B • Chicano Community Organizations (4) Staff [E2]

Prerequisite: Upper Division standing or permission of the instructor.

The theory of organizing within the Chicano community will be analyzed through field observations of currently operating Chicano community organizations.

174 • Chicano Politics (4) Staff [E2]

Political life in the barrio, political behavior of the Chicano community and representation of the Chicanos by elected officials and interest groups.

180 • Survey of Chicano Literature (4) Lomeli [D]*Prerequisite: None*

The purpose of this course is to provide the student with a general overview of all the literature written by Chicanos by covering all genres: poetry, novel, theatre, short story and essay. The course aims to portray a people's experience through literature and how that experience is manifested in a given work.

181 • The Chicano Novel (4) Staff [D]

Reading, analysis and critique of the contemporary Chicano novel as it pertains to the Chicano experience.

186A-B • Music/Dance of the Chicanos (4) Staff [C]*Prerequisites: None.*

An Historical perspective of Mexican and Chicano Music and Dance with emphasis on the indigenous cultures and other contributing cultural elements which combine to form traditional and contemporary Chicano music and dance.

188A-B • Chicano Drama: Art and Life (4-4) Staff [C]

Focusing on drama as artistic expression and social document, the course analyzes the development of Chicano drama in dialectical interplay with the history and culture of the Chicano

188C • Chicano Dramatic Literature and Playwriting (4) [C]

Prerequisite: Chicano Studies 188A and B or consent of the instructor; knowledge of Spanish and English.

This seminar will analyze contemporary expressions of bilingual (Spanish-English) Chicano dramatic literature in the form of published and unpublished plays written by Chicanos in recent years.

189 • Immigration and the U.S. Border (4) Garcia [E-2]*Prerequisites: Upper division standing or permission of instructor*

An analysis of the socio-economic and political factors which have determined and continue to form the basis for the development of the United States immigration policies and practices toward Mexico and the U.S.-Mexican border.

190 • Introduction to Chicano Poetry and Short Story (4) Staff [D]

Analysis and critique of the Chicano short story with discussions on the realities and values presented on the Chicano experience and universe by their authors

191AA-ZZ • Special Topics in Chicano Studies (4) Staff [E2]

Designed to allow courses of varying topics in areas of expertise of visiting professors, to broaden opportunities for students. Examples might be: Immigration, Native American, Mexican, or Latin American Influences on the Chicano, Legal Issues, The Migrants.

Course may be repeated up to three times (12 units) *providing* the letter designations are different.

192 • Field Research (4-12) Staff

Prerequisite: Chicano Studies 170A and B. Open only to seniors, approved by instructor and department chairman.

Internship in contemporary urban problems and decision-making processes as they affect the Chicano. Internship based on directed research through observation, participation and relevant readings. Student individually assigned, instructed and supervised in field work involving practical experience in decision-making unit of local governmental social service agencies or of community liaison agencies. (F,W,S)

193 • Undergraduate Seminar (4) Staff

Prerequisite: Two courses in Chicano Studies, permission of instructor prior to enrollment, and Upper Division standing.

Special topics in Chicano Studies. To be offered intermittently.

197 • Special Topics Seminar: Education of the Chicano Child (4) Staff

Purpose of the course is to present a survey of the relationship between the schools and the Chicano child. Also included will be information on theories, methods, and resources necessary for developing and evaluating effective teaching strategies in meeting the educational needs.

198 • Readings in Chicano Studies (1-4) Staff

Prerequisites: Advanced status with a B average in Chicano Studies courses.

Reading in Chicano Studies under the guidance of a faculty member in the department. Students must prepare a short plan of study and have it approved by the sponsoring faculty member.

***199 • Independent Studies** (1-5) Staff

Prerequisites: Completion of a minimum of 84 units. Admission by special permission only.

Limited to no more than five units in one quarter and no more than 12 units total. (F,W,S,SS)

*See N-2 for 198/199 independent studies unit limitations.

Classics

Professors

Apostolos N. Athanassakis, Ph.D., *University of Pennsylvania; Greek Poetry, Classical Linguistics.*

Howard W. Clarke, Ph.D., *Harvard University; Epic, Comparative Literature.*

Borimir Jordan, Ph.D., *UC Berkeley; Philology, Epigraphy, History, Religion.*

¹Robert F. Renehan, Ph.D., *Harvard University; Greek and Latin Literature, Textual Criticism, Greek Philosophy and Medicine.*

John P. Sullivan, M.A., *Cambridge; Latin Literature, Greek Philosophy, Roman History, Comparative Literature.*

³David C. Young, Ph.D., *University of Iowa; Greek Poetry, Ancient Athletics.*

Associate Professors

Alva W. Bennett, Ph.D., *UC Berkeley; Latin Literature, Poetry.*

Joseph S. Margon, Ph.D., *University of Southern California; Greek Drama, Latin Prose, Literary Criticism (Chairperson)*

¹Jo-Ann R. Shelton, Ph.D., *UC Berkeley; Greek and Latin Literature, Roman Drama, Roman Society.*

¹Absent on Leave Fall 1980

³ Absent on Leave Spring 1981

Concerns of the department

The field of Classics incorporates the study of the civilization of ancient Greece and Rome and of the world and time over which the Greeks and Romans extend their influence. The heart of classical studies is the collection of literary, historical, philosophical, and scientific writings from Homeric down to Byzantine times, which survived to direct the development of modern Western culture. The reconstruction and interpretation of these writings is the primary responsibility of the classical philologist, whose colleagues frequently are specialists in some particular field, such as epigraphy, the study of ancient inscriptions; or papyrology, the study of papyrus remains. Others devote their talents to research in specific cultural phenomena, such as Greek political theory, classical art, or mythology. Still others turn their attention to the problems of language, grammar, and linguistics. All these studies are interrelated, and all the classicists pursuing them are in a real sense working toward the same goal: a wider picture of Graeco-Roman culture as a means toward a clearer understanding of our own.

Departmental Advising and Publications

Each faculty member takes a certain number of undergrad-

uate students majoring in his or her particular field to advise them about academic matters. Professor David Young is the graduate adviser Fall 1980; Professor Robert Renehan will be the graduate adviser starting Winter 1981. There are various fliers describing our undergraduate and graduate programs and courses. Course descriptions are prepared and distributed to related departments before the start of each quarter. The fliers and brochures are prepared and distributed by the middle of November to high schools, junior colleges, and universities throughout the country.

Bachelor of Arts—Classics

The Classics major program offers a challenging but rewarding course of study in the unified field of Graeco-Roman culture. It is designed to accommodate both the aspirant to graduate studies in Classics or related fields and the student primarily interested in an undergraduate liberal arts major.

Preparation for the major

Required: Greek 1, 2, 3, 50, and Latin 1, 2, 3, 50 (or equivalents) with a grade of C or higher, History 4A—B, and Philosophy 20A.

Upper Division major

Required: A minimum of 36 units in upper division Greek and Latin courses numbered 106 or higher. The minimum in either language is 12. Up to eight units of the following courses may be taken P/NP in the major: Greek 199, Latin 199. Religious Studies 139 (New Testament Greek) may also be counted as an upper division Greek course.

At least one year of German or the equivalent is strongly recommended for the student who intends to pursue the field of Classics beyond the B.A. degree. It is also recommended that some of the student's electives be chosen from Classics 37—40 and from closely related courses in art history, history, and philosophy.

Bachelor of Arts—Greek

Preparation for the major

Required: Greek 1,2,3,50, History 4A—B, and Philosophy 20A.

Upper Division major

Required: A minimum of 36 units in upper division Greek (or Latin) courses numbered 106 or higher. The minimum in Greek is 26 units. Up to eight units of Greek 199 may be taken P/NP in the major. (See last paragraph Bachelor of Arts—Classics for recommended courses.)

Bachelor of Arts—Latin

Preparation for the major

Required: Latin 1,2,3,50, History 4A—B, and Philosophy 20A.

Upper Division major

Required: A minimum of 36 units in upper division Latin (or Greek) courses numbered 106 or higher. The minimum in Latin is 26 units. Up to eight units of Latin 199 may be taken P/NP in the major. (See last paragraph of Bachelor of Arts—Classics for recommended courses.)

Bachelor of Arts—Classical Archaeology

This program will provide the student with a broad and intensive knowledge of the topography, monuments, art, and architecture of the ancient world, as well as ancient history and civilization. The student will also be able to acquire a grasp of archaeological methods and a basic knowledge of Greek and Latin. The student will have the choice of this major of placing an emphasis on Greek or Roman art and archaeology.

Preparation for the major

Required: Classics 37,38,40, Anthropology 3, History 4A, Art History 6A, and Greek or Latin 1,2,3,50, and 106.

Upper Division major

Required: 44 Upper division units, including Anthropology 100, Classics 125, Anthropology 183 or 181, and either the Greek or Roman emphasis below:

Greek emphasis: Classics 100A, History 111A—B, 112—A, and choice of three out of six: Art History 152E, 152F, 152J, Classics 180A—B, and Classics 180D.

Roman emphasis: Classics 100B, History 113A—B, 113Q, and choice of three out of seven: Art History 152G, 152H, 152I, 152K, 152L, Classics 180D, and Classics 180A.

The eleventh required upper division course for the major may be taken from any Greek or Latin course numbered 111 or higher or from any of the following: Art 152A, 153A, and 153B.

Bachelor of Arts—Classical Civilization

The major in Classical Civilization is designed for those students who wish to pursue a basic liberal arts degree and prefer a general interdisciplinary program to specialization in the Classical languages and their literature.

Preparation for the major

Required: Classics 37,38,40, Philosophy 20A, and Greek or Latin 1, 2, 3, and 50 or 106.

Upper Division major

Required: 40 Upper division units distributed among the specified groups as indicated below, including Classics 100A—B (eight units), and:

Group I: At least two courses (eight units) from Classics 102, 120, 125, 130, 135.

At least five courses (20 units) from Groups II-IV, with a minimum of one course in each group:

Group II: History 111A—B, 112A, 112F, 113A—B, Political Science 187, Classics 104, 105.

Group III: Classics 101, 103, 106, Philosophy 151, 152, 153, 156, 195, Religious Studies 116A, 116B, 131B, 134A—B.

Group IV: Art History 152E—F—G—H—I—J—K—L, Classics 180A—B—D.

The tenth required course may come from any of the above groups or the completion of 50 and 106 in Greek or Latin. Up to eight units of the following courses may be taken P/NP in the major: Greek 199, Latin 199.

Master of Arts—Classics

Admission requirements and prerequisites

In addition to the general requirements for admission to graduate status, the applicant should have an undergraduate major or the equivalent in Greek, Latin or Classics. Other students may be admitted if they demonstrate proficiency in the languages, but they will be required to make up any deficiencies in their undergraduate training, in addition to the regular course work for the M.A. degree.

Degree requirements

The Department offers the M.A. degree under Plan I (30 units and thesis) and Plan II (36 units without thesis). In either plan, more than half of the units must be in graduate courses within the Department. The remaining units may come from upper division courses in the Department or from approved courses in other departments such as art, history, and philosophy, if they are relevant to the student's program.

The following course is required: pro-seminar in bibliography and methodology. (Classics 201A).

The candidate must meet the following requirements before taking the M.A. comprehensive examination: a) reading knowledge of German, French or Italian (by examination), b) sight translation (by examination), c) composition (by course credit or examination), d) ancient history (by course credit or examination).

Successful performance in the M.A. comprehensive examination on Greek and Latin literature.

Doctor of Philosophy—Classics

For admission, the candidate will present an M.A. in Classics, Latin or Greek from this University, or the equivalent from elsewhere. There is no unit requirement, but the two year residency required by the Graduate Division will normally be observed. In addition to upper division courses, and, in particular, graduate seminars offered as specialties by the participating faculty, there are certain required courses: History of Greek and Latin Literature and of Clas-

sical Scholarship; Greek and Latin Prose Composition; two courses from the following ancillary disciplines: Greek Epigraphy, Comparative Grammar; Mythology; Textual Criticism; Metrics; Roman Law; and interdisciplinary requirement of 2-4 courses in closely related fields, consistent with the student's needs and interests. Some of these courses may be satisfied by examination or accommodated in Pro-Seminars. The candidate must satisfy the following requirements by examination.

Group I: reading knowledge of German, and French or Italian; sight translation in Latin and Greek; Prose Composition in Latin and Greek.

Group II: History of Greek and Latin Literature; Greek and Roman History and Civilization; a special topic (of the candidate's choosing, either interdisciplinary, an ancient author, a specific ancient *genre*, or some recognized sub-discipline of Classics, such as Epigraphy); an oral examination, administered by the student's committee. Upon passing the oral, the student will proceed with his dissertation.

Career opportunities

The several majors offered by the Classics Department, as well as offering a liberal arts undergraduate education, are

Classics

Courses in translation

Lower Division courses

20A—B • Latin and Greek in Current English (4-4) Staff [D] F,W

Study of Greek and Latin element in English etymology. No knowledge of Greek or Latin necessary.

36 • Ancient Epic and Narrative (4) Staff [D]

A study in translation of the *Iliad*, *Odyssey*, *Aeneid* and such works as Apollonius' *Argonautica*, Ovid's *Metamorphoses*, and short narrative poems of the Alexandrian and Neoteric poets.

37 • Greek Literature in Translation (4) Shelton [D] W

Reading and lecture survey of principal Greek writers, such as Homer, Pindar and Thucydides.

38 • Latin Literature in Translation (4) Clarke [D] F

Reading and lecture survey of principal Roman writers, such as Catullus, Horace and Vergil.

40 • Greek Mythology (4) Staff [D] F,W,S

Study of the rationale of mythology, and the various patterns of mythography. Readings in primary literary sources.

Upper Division courses

100A—B • Greek and Roman Civilization (4-4) Margon, Shelton [D] W,S

Prerequisite: Classics 100A is not a prerequisite for Classics 100B.

Introduction to the various aspects of Graeco-Roman civilization such as art, education, daily

life, festivals, law, religion, science and sports. 100A: Greek. 100B: Roman.

***101 • The Nature of Man in Greek Thought** (4) Renehan [D]

A survey of the major Greek beliefs about the nature of man—body, soul afterlife, gods and men, man in the cosmos—from the earliest beginning to the early Christian period. Readings (in translation) of literary, philosophical, religious, medical texts.

102 • Greek Tragedy in Translation (4) Staff [D] W

Plays by Aeschylus, Sophocles and Euripides in English translation. The role of tragedy in Greek culture and literature.

103 • Survey of Greek and Roman Religion (4) Renehan [D]

An introduction to basic Greek and Roman religious beliefs and attitudes. Both literary and non-literary documents will be studied (in translation) for their evidential value.

104 • Women in Ancient Rome (4) Sullivan [D] S

Examines the everyday life and political, social, legal and religious position of Roman women from Rome's foundation to the rise of Christianity. Stress is laid on their comparative emancipation between 100 B.C. and A.D. 150 and their portrayal in history and art.

***105 • Ancient Athletics** (4) Young [D]

Study of specific sports and events, history of ancient Olympics and other meets, and of individual achievements; professionalism, training, facilities and place of athletics in Greek culture, literature and art.

***106 • Religion, Magic and Medicine in Ancient Greece** (4) Renehan [D] S

oriented toward teaching jobs at the secondary, college and university level. The spectrum of courses offered to our majors would enable the student to teach Classical Civilization, Ancient History, Greek and Latin Literature in translation, Greek and Roman Art, Archaeology, Greek Philosophy as well as the Greek and Latin languages.

Teaching credentials

Students who complete a major in Classics or the majors in Greek or Latin may be eligible to pursue a California teaching credential. A Classical Civilization major can be used to obtain a teaching credential in three areas: Classical Studies, Humanities, and Ethnic Studies.

Specific details of State and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180, Phelps Hall.

Correspondence information

Department of Classics, South Hall, Rm. 4631, University of California, Santa Barbara, California 93106. Phone (805) 961-3556.

The old and the new in Classical Greek modes of thought; primitive religious and magical beliefs and scientific medical teachings. A study in the intellectual revolution of Greece. Readings in primary literary sources in translation and secondary literature.

***120 • Greek and Latin Lyric Poetry** (4) Staff [D] S

Development, forms and interpretation of ancient lyric poetry; such authors as Sappho, Pindar, Catullus and Propertius in English translation.

***125 • Greek and Roman Historians in Translation** (4) Jordan [D] F

Development of history as a genre; such authors as Herodotus, Thucydides, Livy and Tacitus in English translation.

***130 • Comedy and Satire in Translation** (4) Bennett [D]

The comic playwrights, such as Aristophanes and Plautus, and satirists, such as Lucian and Juvenal, in English translation.

***135 • Seneca and Roman Tragedy** (4) Shelton [D]

Discussion of the origin and development of Roman tragedy, with specific emphasis on the tragedies of Seneca. Study of character portrayal, plot development, theatrical effect and other elements, such as psychological exploration, typical of Senecan tragedy.

***139 • Classical Literature in Translation** (4) Staff [D]

Reading and lecture survey of classical prose and poetry to discover and illustrate the attitude of the Greeks and Romans toward great men and women.

***180A—B • Mediterranean Archaeology** (4-4) Jordan [C] F
Monuments of the Bronze Age in the Aegean and monuments of the archaic and classical periods in the Greek world (including south Italy and North Africa).

180D • Roman Archaeology (4) Shelton [C] W
A survey of the major monuments and sites in Rome and near the Bay of Naples.

****199 • Independent Studies in Greek and Latin** (1-5) Staff
Independent study in areas in which both Greek and Latin are necessary. 199 courses are limited to no more than five units in one quarter and no more than 12 units total.

Graduate courses

† 201A—B • Pro-seminar (2-2) Young F
Bibliography, methodology and history of classical scholarship.

202 • Comparative Greek and Latin Morphology and Syntax (4) Athanassakis
Introduction to classical linguistics; history of Greek and Latin in their Indo-European context (including Mycenaean Greek).

***203 • Mythology and Religion** (4) F
Greek myths; development, variants and literary use. Greek and Roman religions.

211—212—213 • History of Greek and Latin Literature (2-2-2) Staff F, W, S
Survey of development of poetry and prose; major authors. Special reading and reports.

252 • Latin Paleography (4) Staff
A systematic study of handwriting in Latin manuscripts from Roman times to the Renaissance. Exercises in reading, transcribing, and dating; the use of manuscripts in the preparation of critical editions of Latin texts.

***253 • Greek Epigraphy** (4) Jordan S
The study of Greek inscriptions as documents for the history, religious, social and cultural life of Ancient Greece.

596AA-ZZ • Directed Reading and Research (2-4) Staff
Prerequisite: Written proposal, approved by department chairman and filed with Graduate Division.
Individual Tutorial.

597 • Preparation for Comprehensive Exams (1-6)
Prerequisites: Permission of graduate adviser and chairman.

Study for Master's comprehensive examinations and Ph.D. examinations. No unit credit allowed toward degree.

† 201A will not be offered 1980-81; 201B will be offered Winter 1981.

**See N2 for 198/199 independent studies unit limitations.

*Not offered 1980-81

598AA—ZZ • Master's Thesis Research and Preparation (1-4) Staff
Prerequisites: Permission of instructor and graduate adviser.

Independent Research. No unit credit toward degree.

Greek Lower Division courses

***1FS • Freshman Seminar** (3)
The course will deal with the methodology of studying a literary text as a source of information for religious and social institutions.

1 • Elementary Greek (4) F

2 • Elementary Greek (continuation of Greek 1) (4) W
Prerequisite: Greek 1 or equivalent.

3 • Intermediate Greek (4) S
Prerequisite: Greek 2 or equivalent.
Review of syntax and reading of Attic prose writers.

4 • Accidence and Syntax (1) Margon F
Prerequisite: Greek 3 or equivalent
Systematic study of declensions and conjugations; peculiarities of syntax. No reading. May be taken concurrently with courses for which it is prerequisite; an A or B grade in Greek 3 will be considered the equivalent of Greek 4 where the latter is a prerequisite.

***10AB • Beginning Greek—Accelerated Sequence** (6-6) Young W, S
The two quarter sequence 10AB covers the same material as the regular sequence, Greek 1-2-3, but at a more rigorous pace. Designed for students, from Freshmen to Graduates, who wish to compress their early study of Greek into two quarters. Greek 10B and Greek 3 fulfill the same prerequisites.

50 • Introduction to Prose: Xenophon, Plato (4) Shelton [D] F
Prerequisite: Greek 4 or equivalent.
Reading and syntactical analysis of Attic prose writers, such as Xenophon, Plato, or Lysias.

Upper Division courses

106 • Introduction to Poetry: Homer (4) [D] W
Prerequisite: Greek 4 or equivalent.
Reading in the *Iliad*. Homeric grammar and metrics. Greek 104 (or 50) and 106 or their equivalent are prerequisite to all higher language courses in Greek.

108 • Attic Orators: Demosthenes, Andocides, & Isocrates (4) Jordan [D]
Prerequisite: Greek 106.

A study of the language, style, and historical background of famous orations by Demosthenes, Andocides, and Isocrates.

***138 • Pre-Socratic Philosophers** (4) Staff [D]
Philological study in materials ranging from Thales through Democritus.

142A—B • Plato (4) Renahan [D]
Reading and study of a complete Socratic dialogue

***143 • Post-Platonic Philosophers** (4) Jordan [D]
Philological study of materials ranging from Aristotle through Plotinus

151 • Euripides (4) Jordan [D]
Introduction to the tragic genre. Reading and study of a complete play

152 • Sophocles (4) Margon [D]
A complete tragedy, plus readings in Sophoclean literature.

***153 • Aeschylus** (4) Staff [D]
Study of a complete tragedy. Problems of textual criticism

***154 • Aristophanes** (4) Staff [D] W
Reading of a complete play; history of Greek comedy

***161 • Hesiod, Theognis, and Solon** (4) Staff [D] F
An introduction to archaic religion, mythology, ethics and historiography.

***162 • Herodotus** (4) Jordan [D] F
Reading and study of the History of Herodotus.

***163 • Thucydides** (4) Jordan [D] W
Reading and research in the historical, literary and philological aspects of Thucydides

***165 • Xenophon** (4) Jordan [D] S
A study of the language, style, and background of his historical works

***171 • Lyric Poets and Homeric Hymns** (4) Young [D]
Exclusive of the choral poets and the primarily ethical elegists. The fragments of Alcaeus, Anacreon, Archilochus, Sappho, Tyrtaeus and others; selected Homeric hymns.

172 • Pindar (4) Young [D]
Reading, interpretation, metrical study and textual criticism. Introduction to other choral poets

***173 • Hellenistic Poets** (4) Bennett [D] S
Introduction to the poetry of the Alexandrian period, such as that by Apollonius Rhodius, Callimachus and Theocritus.

****199 • Independent Studies in Greek** (1-5) Staff
199 courses are limited to no more than five units in one quarter and no more than 15 units total.

Graduate courses

The following courses are similar in content to undergraduate courses numbered with the same last two digits, but work is at graduate level. 208 Attic Orators is comparable to 108 Attic Orators.

208 • Attic Orators (cf. 108)

***238 • Pre-Socratic Philosophers**
(cf. 138)

242A—B • Plato
(cf. 142 A—B)

***243 • Post-Platonic Philosophers**
(cf. 143)

251 • Euripides
(cf. 151)

252 • Sophocles
(cf. 152)

***253 • Aeschylus**
(cf. 153)

***254 • Aristophanes**
(cf. 154)

***261 • Hesoid, Theognis, and Solon**
(cf. 161)

***262 • Herodotus**
(cf. 162)

***263 • Thucydides**
(cf. 163)

***265 • Xenophon**
(cf. 165)

***271 • Lyric Poets and Homeric Hymns**
(cf. 171)

272 • Pindar
(cf. 172)

***273 • Hellenistic Poets**
(cf. 173)

***209 • Greek Seminar in Plays of Menander**
(4) Staff
Examination and study of the plays of Menander, which have been discovered in this century

***220 • Seminar in the Greek Novel** (4) Staff
A study of the Greek romance and its place in the history of Greek literature.

***240A—B—C • Greek Prose Composition**
(2-2-2) Staff F,W,S
Advanced grammar, sight reading and extended prose composition. It is recommended that this series of courses be taken together with Greek 162—3—5

241A—Z • Seminar in Greek Literature (4) Staff
Prerequisite: Classics 201 or permission of instructor. F,S
Intensive study and research in a Greek author or genre. Author varies. Course number may be repeated, but not letter.

***255 • Graduate Reading in Plutarch** (4) Staff
A study of the language, style, and historical background of the *Lives* and the *Moralia*.

***256 • Graduate Reading in Epicurus** (4) Shelton
Reading, translation and discussion of the letters of Epicurus.

***258 • Graduate Reading in Homer** (4) Staff
A reading of large portions of the Iliad or Odyssey, depending on the instructor's choice. The course is primarily designed to improve the student's facility in translating Homeric Greek.

596AA—ZZ • Directed Reading and Research (2-4) Staff
Prerequisite: Written proposal, approved by department chairman and filed with Graduate Division.
Individual tutorial.

598AA—ZZ • Master's Thesis Research and Preparation (1-4) Staff
Prerequisites: Permission of instructor and graduate adviser.
Independent Research. No unit credit toward degree.

Latin

Lower Division courses

1 • Elementary Latin (4) Young F

2 • Elementary Latin (continuation of 1) (4) Staff W
Prerequisite: Latin 1 or equivalent.

3 • Intermediate Latin (4) Jordan S
Prerequisite: Latin 2 or equivalent. Review of forms and syntax and reading of Roman prose writers.

4 • Accidence and Syntax (1) Margon F
Prerequisite: Latin 3 or equivalent.
Systematic study of declensions and conjugations; peculiarities of syntax. No reading. May be taken concurrently with courses for which it is prerequisite; an A or B grade in Latin 3 will be considered the equivalent of Latin 4 where the latter is a prerequisite.

10A—B • Beginning Latin—Accelerated Sequence (6-6) Margon W,S
The two quarter sequence 10A—B covers the same material as the regular sequence, Latin 1-2-3, but at a more rigorous pace. Designed for students, from Freshmen to Graduates, who wish to compress their early study of Latin into two quarters. Latin 10B and Latin 3 fulfill the same prerequisites.

50 • Introduction to Latin Prose (4) Staff [D] F
Prerequisite: Latin 4 or equivalent.
Selected authors. Reading and syntactical analysis of prose writers, such as Caesar, Cicero, and Nepos.

Upper Division courses

***103 • Medieval Latin Readings** (4) Staff [D]
Prerequisite: Latin 1, 2, and 3 (or their equivalents or permission of instructor).
Graded and selected reading of Medieval Latin prose and verse writers.

106 • Introduction to Latin Poetry (4) Shelton [D] W
Prerequisite: Latin 50 or equivalent.
Selected authors; Catullus, Ovid, Martial. Grammar and metrics of Latin poetry

***112 • Roman Elegy** (4) Bennett [D] F
Reading and study of Propertius and other elegists.

***113 • Roman Satire** (4) Sullivan [D] W
Prerequisite: Latin 106 or equivalent.
Horace, Juvenal, Persius, and Martial.

***114 • Roman Comedy** (4) Renahan [D]
Plautus and Terence. Reading of complete plays and study of the origins of Roman Comedy.

***116A—B • Cicero: Essays and Orations** (4-4) Staff [D] F,W
Philosophical and rhetorical works and speeches.

117 • Prose of the Empire (4) Sullivan [D] S
Study and reading selected from such authors as Petronius, Seneca, and Quintilian.

***118 • Roman Epistles** (4) Margon [D]
Prerequisite: Latin 106 or equivalent.
Reading, translation and discussion of the letters of Cicero and of Pliny.

120 • Sallust (4) Bennett, Jordan [D]
Reading and philological study.

***122 • Livy** (4) Bennett [D]
Study of the structure and Latinity of Livy. Extensive reading.

123 • Tacitus (4) Jordan [D]
Reading in the major works. Study of Tacitean style and models.

134 • Lucretius (4) Shelton [D]
Reading, translation, discussion of style and meter of Lucretius' epic poem *De Rerum Natura*.

***135 • Vergil** (4) Shelton [D]
Reading, translation, discussion of style and meter of Vergil's epic poem *Aeneid*, as well as his *Georgics* and *Eclogues*.

***136 • Ovid** (4) Bennett [D]
Reading, translation, discussion of style and meter of Ovid's epic poem *Metamorphoses* and of his *Fasti*.

137 • Catullus (4) Bennett [D]
Reading, translation, discussion of style and meter of his poems.

138 • Horace (4) Bennett [D]
Reading, translation, discussion of the *Odes*, *Satires*, and *Epistles*.

****199 • Independent Studies in Latin** (1-5) Staff
199 courses are limited to no more than five units in one quarter and no more than 15 units total.

****See N-2 for 198 / 199 independent studies unit limitations.**

Graduate Courses

The following courses are similar in content to undergraduate courses numbered with the same last two digits, but work is at a graduate level. 213 Roman Satire is comparable to 113 Roman Satire

***212 • Roman Elegy**
(cf. 112)

***213 • Roman Satire**
(cf. 113)

***214 • Roman Comedy**
(cf. 114)

***216A—B • Cicero: Essays and Orations**
(cf. 116A—B)

217 • Prose of the Empire
(cf. 117)

***218 • Roman Epistles**
(cf. 118)

220 • Sallust
(cf. 120)

***222 • Livy**
(cf. 122)

223 • Tacitus
(cf. 123)

234 • Lucretius
(cf. 134)

***235 • Vergil**
(cf. 135)

*Not offered 1980-81

***236 • Ovid**
(cf. 136)

237 • Catullus
(cf. 137)

238 • Horace
(cf. 138)

***204 • Graduate Reading Course in Plautus**
(4) Renehan
Plautus. Reading of one or more complete plays with intensive study of various problems, e.g., origins of Roman Comedy, Plautine textual criticism and metrics, nature of early Latin language.

***205 • Graduate Seminar in Senecan Tragedy** (4) Shelton [D]
Research and discussion of the tragedies of Seneca.

***206 • Seminar in Neronian Literature** (4) Sullivan
The age of Nero, prolific in literature and philosophy, had certain common themes, such as the new golden age and the nature of the principate. Selections from both Senecas, Lucan, Persius, Calpurnius Siculus will be used to explore those themes.

210A—B—C • Latin Prose Composition (2-2-2) Staff
Advanced grammar and extended prose composition.

***215 • Seminar in the Roman Novel** (4) Sullivan
Works such as Petronius' *Satyricon* and Apuleius' *Metamorphoses: A study of the literary problems*.

221A—Z • Seminar in Latin Literature (4) Staff W

Prerequisite: Classics 201 or permission of instructor.

Intensive study and research in a Latin author or genre. Author varies. Course number may be repeated, but not letter.

***232 • Graduate Reading in Augustan Poets** (4) Sullivan

This course covers the Augustan period of Latin literature with its great political and social tensions, and is one of the most productive literary eras known to us. A literary, social, and historical study in the time of such authors as Ovid, Vergil and Propertius.

***233 • Graduate Reading in Seneca** (4) Staff [D]

Reading and translation of the Latin tragedies of Seneca; discussion of grammar and metre.

***245 • Latin Sight Translation** (2) Staff
Instruction and practice in how to translate Latin at sight without the use of a dictionary.

596AA—ZZ • Directed Reading and Research (2-4) Staff

Prerequisite: Written proposal, approved by department chairman and filed with Graduate Division.

Individual Tutorial.

598AA—598ZZ • Master's Thesis Research and Preparation (1-4) Staff

Prerequisites: Permission of instructor and graduate adviser.

Independent Research. No unit credit toward degree.

Comparative Literature

Advisory Committee (1979-80)

- Stuart Atkins, Ph.D., *Yale University; Professor of German, (18th century literature).*
- Howard W. Clarke, Ph.D., *Harvard University; Professor of Classics and Comparative Literature (Homer, classical tradition) (Chairperson of the Program).*
- Genevieve Delattre, Ph.D., *Columbia University; Professor of French, (19th century literature, Romanticism, Balzac).*
- William Frost, Ph.D., *Yale University, Professor of English, (Renaissance literature, Chaucer, Dryden)*
- Gerhart Hoffmeister, Ph.D., *University of Maryland; Professor of German (Baroque and Romantic literature)*
- Donald Pearce, Ph.D., *University of Michigan, Professor of English, (Romantic Poets, W.B. Yeats).*
- Harvey L. Sharrer, Ph.D., *UC Los Angeles; Associate Professor of Spanish and Portuguese, (Arthurian literature).*
- J. P. Sullivan, M.A., *Cambridge University; Professor of Classics, (Latin literature, Ezra Pound).*
- Ronald W. Tobin, Ph.D., *Princeton University; Professor of French, (17th century French theatre, Racine)*

Concerns of the program

The interdepartmental program in Comparative Literature initiated in 1969-70 offers an undergraduate major leading to the Bachelor of Arts degree, along with studies leading to the Master of Arts and the Doctor of Philosophy degrees. The Program is presently under the direction of the Dean of the College of Letters and Science and is administered by a chairperson and Advisory Committee representing the Departments of Classics, English, French and Italian, Germanic and Slavic, and Spanish and Portuguese.

Comparative Literature is the study of literature without specific regard for national or linguistic boundaries. It is comparative in that it deals with the interrelationships between different literatures. The comparatist also deals with the masterpieces, theories, themes, and periods of world literature.

The student, whether preparing for the major as an undergraduate, or for the M.A. or the Ph.D., will be under the direction of one of the members of the Advisory Committee.

Advising and Publications

Students are advised by the chairperson of the program and by members of the Advisory Committee within their major departments.

Bachelor of Arts

Preparation for the major

Students intending to major in Comparative Literature must

first complete the normal preparation requirements for the major in the literature of their primary emphasis. Students selecting English as the literature of primary emphasis may not elect the foreign literature option in preparation for the major but instead must complete through the sixth quarter of a foreign language.

Upper Division major

The major in Comparative Literature requires 40 units of upper division course work in two national literatures, one of which may be English, in their original languages. Twenty (20) of these units must be in the student's primary literature, sixteen (16) in the secondary literature. Majors must also take Comparative Literature 100, four units, (Introduction to Comparative Literature), normally in their senior year. Comparative Literature courses may be substituted up to the amount of eight (8) units for the required upper division courses.

Master of Arts degree

Admission Requirements

In addition to fulfilling the general requirements for admission to graduate status, the applicant should have an undergraduate major in Comparative Literature or its equivalent, i.e., a major and a strong minor in two literatures, one of which may be English, with some course work in Greek or Latin or classics in translation.

Foreign applicants must take the TOEFL (Test of English as a Foreign Language) as a part of their application for admission.

If a foreign applicant has completed a bachelor's degree in the United States and has taken English as a Second Language at his/her undergraduate institution, or has been awarded a master's degree by a U.S. institution, or speaks English as a native language (applicants from England, Australia, Canada, etc.), he or she will not be required to submit the TOEFL score.

With few exceptions, TOEFL tests are given around the world at various times during the year. If the TOEFL is not available, students will be asked for a U.S. Consulate confirmation of their abilities in English.

The requirement of the TOEFL exam was made by the Graduate Division. Please send test scores to them.

Recommendations regarding admission will be made by the Comparative Literature Advisory Committee within the general guidelines set by the Graduate Division. Upon admission, an M.A. student will have as an advisory committee the Program Chairperson and two members of the CL Advisory Committee appointed to represent the student's fields of interest. In special cases, some other member of the Faculty may be asked to serve as an adviser.

Degree Requirements

The M.A. degree in Comparative Literature is offered under

Plan I (thesis) and Plan II (without thesis).

Plan I: The student is expected to take 30 units of course work, plus six units of thesis work. Of the 30 units of course work, more than half must be in graduate courses approved by the advisory committee. Comparative Literature 200 (Seminar in Comparative Literature) is also required. In addition to the two primary languages, the candidate must demonstrate a reading knowledge of a foreign language approved by the advisory committee. The thesis will be approved by the student's advisers and should be comparative in nature and methodology.

Plan II: The student is expected to take 36 units of course work in two literatures, one of which may be English, in their original languages. Comparative Literature 200 (Seminar in Comparative Literature) is also required. Approximately two-thirds of the units should be in the student's primary literature, one-third in the secondary, and more than half of all units must be in graduate courses. All courses must meet with the approval of the advisory committee. The candidate must demonstrate a reading knowledge of a foreign language approved by the advisory committee. Finally, the candidate must pass a comprehensive written examination on the major and minor literatures, which will be set by the advisory committee.

Doctor of Philosophy degree

Admission Requirements and Prerequisites

In addition to fulfilling the general requirements for admission to graduate status, the student must meet the requirements of the Comparative Literature Program. A student entering with an M.A. from another university must demonstrate to the Committee, normally by examination, satisfactory literary background and linguistic resources for doctoral work in Comparative Literature. Any course deficiencies should be made up during the first quarter of residence.

Foreign applicants must take the TOEFL (Test of English as a Foreign Language) as a part of their application for admission.

If a foreign applicant has completed a bachelor's degree in the United States and has taken English as a Second Language at his/her undergraduate institution, or has been awarded a master's degree by a U.S. institution, or speaks English as a native language (applicants from England, Australia, Canada, etc.), he or she will not be required to submit the TOEFL score.

With few exceptions, TOEFL tests are given around the world at various times during the year. If the TOEFL is not available, you will be asked for a U.S. Consulate confirmation of your abilities in English.

The requirement of the TOEFL exam was made by the Graduate Division. Please send test scores to them.

Recommendations regarding admission will be made by the Comparative Literature Advisory Committee within the general guidelines set by the Graduate Division. Upon admission, the student will have as a committee those members of the Comparative Literature Advisory Committee who represent the major and minor languages. In special cases, other members of the Faculty may be asked to serve as advisers.

Degree Requirements

The Ph.D. degree in Comparative Literature requires the study of three literatures, one of which may be English, in their original languages, one major and two minors. The major will ordinarily entail the mastery of one literature in its full historical development. The minors may, with the approval of the student's advisers, be limited to the most important works of one literature, or to literary influences (e.g., Greek on German), periods (e.g., English Romanticism), topics (e.g., ancient literary criticism), or genres (e.g., the French novel). Consequently, the student who is in the first year follows the course of study leading to the M.A. degree under Plan II should expect to extend course work to include a second minor in literature.

The student must also demonstrate a reading knowledge of one of the following languages: French, German, Latin, Greek, or, with the consent of the adviser, whatever other language is relevant to, but not part of, the program. The form and content of this examination will be determined by the student's advisory committee.

Upon completion of all course work, the student will take three written examinations on the major and minor literatures. The written examinations will be followed by an oral examination administered by a doctoral committee nominated by the Comparative Literature Advisory Committee and approved by the Graduate Dean.

Upon passing the qualifying examinations, the student will be advanced to candidacy and will then consult with a member of the graduate faculty concerning a dissertation topic. After the topic and research plan have been approved by the doctoral committee, a dissertation director will be appointed by the Chairperson of the Program, and the candidate will write a dissertation. Upon its completion and acceptance, the candidate will be questioned on it in an oral examination.

Career Opportunities

The Comparative Literature Program provides preparation leading to possible careers as teachers or scholars as well as to positions in Federal, State, and local governments and in community service.

Teaching credentials

Students who complete a major in Comparative Literature may be eligible for pursuing a California teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180 Phelps Hall.

Certain majors may require students contemplating a teaching career to complete specified courses with the major. The major in Comparative Literature must include specific courses required by the departments of their primary and secondary literatures. Consult with designated advisers in the Comparative Literature Program concerning these requirements.

Correspondence information

Comparative Literature Program, Phelps Hall 4206,

University of California, Santa Barbara, California
93106. Phone: (805) 961-3161.

Comparative Literature

Lower Division courses

30A-B-C • Masterpieces of World Literature (4-4-4) Clarke [D]

A survey of western literature from Homer to Solzhenitsyn.

30A • Classical and Medieval Literature from Homer to Dante.

30B • Renaissance and Neoclassical Literature from Petrarch to Diderot.

30C • Romantic and Modern Literature from Rousseau to Solzhenitsyn.

Upper Division courses

100 • Introduction to Comparative Literature (4) Clarke [D]

Method and practice of comparative study. Introduction to masterpieces, theories, themes, and periods of world literature. Required of all Comparative Literature majors.

105 • The Classical Tradition (4) Clarke, Frost, Sullivan [D]

Studies in the post-classical uses of Graeco-Roman literature and mythology. Neoclassicism; myth and literature.

111 • The Picaresque Novel (4) Hoffmeister [D]

Theory of the Picaresque novel; analysis of European masterpieces, using Spanish, French, and English examples as points of departure, but concentrating on the German branch.

115 • The Bildungsroman (4) Temmer [D]

A comparative study of the "novel of education" in French, German, and English. Readings from Rousseau, Stendhal, Flaubert, Goethe, Keller, James, and Joyce.

117 A-B • Romanticism (4-4) Pearce, Hoffmeister [D]

Comparative study of the origins and international development of the Romantic movement.

120 • Medieval Literature (4) Sharrer [D]

Studies in the popular, courtly, religious, and heroic traditions of western European literature and drama from the end of the classical world to the beginning of the Renaissance. The origin, development, and transmission of characteristic themes. May be repeated for credit, if the content changes with the instructor.

125 • Myth (4) Clarke [D]

A comparative study of world mythology with special emphasis on theories of myth and their relevance to the study of literature.

127 • The Tale (4) Lundell [D]

A comparative study of the Tale as form, using texts from Scandinavia and other countries.

131 • Surrealism (4) Cushing [D]

A comparative study of Surrealism and its impact on other movements and the arts.

135 • Realism (4) Exner [D]

A comparative study of Realism, including the view of major theoreticians.

***199 • Independent Studies** (1-5) Staff

Independent Studies with any faculty member. To permit study of a subject desired by the student but not covered in course offerings.

*See N2 for 198/199 independent unit limitations.

Graduate courses

200 • Seminar in Comparative Literature (4) Clarke

Bibliographical and methodological problems of comparative literary study.

205A-B-C • History of Literary Criticism (4-4-4) Clarke

Criticism from antiquity to the present.

594 • Special Topics (1-4) Staff

A special seminar on research subjects of current interest. Variable unit course. S/U or letter grade.

596 • Directed Reading and Research (2-18) Staff

Individual tutorial. A written proposal for each tutorial must be approved by the Program Chairman and filed with the Graduate Division. Minimum: two units per quarter. No more than half of units required for M.A. may be taken in 596 series. Letter grade only.

597. Individual Study for M.A. Comprehensive and Ph.D. Exams (1-12) Staff

For individual study with major professor or chairman or director of student's program. No unit credit allowed toward advanced degrees. Enrollment limited to 24 units per examination (maximum units in any one examination quarter, 12 units). S/U grading only.

598 • Masters Thesis Research and Preparation (2-12) Staff

For research and writing of the M.A. thesis. S/U grade.

599 • Ph.D. Dissertation Research and Preparation (2-12) Staff

For research and writing of the doctoral dissertation. Instructor should be chairman of the student's doctoral committee. S/U grade. Maximum: 12 units.

Computer Science

(Letters and Science)

The College of Letters and Science offers a Bachelor of Arts degree in Computer Science in cooperation with the Department of Computer Science in the College of Engineering. Students begin the curriculum by declaring a pre-Computer Science major status.

The Pre-Major

The following courses must be completed with a minimum grade point average of 2.5 before a student will be admitted to full major status. Courses identified as options within the pre-major are considered equivalent; students may take either of the courses to satisfy the requirement, but they may not take both for credit.

- Mathematics 3ABC or 7ABC or appropriate portions of 3S (Calculus)
- Mathematics 5A (Differential Equations)
- Computer Science 10 (Introduction to Computer Programming)
- Computer Science 20 (Introduction to Computer Science)
- Computer Science 30 (Introduction to Computer Systems)
- Mathematics 9 or 9S (4 units) or 108A (Linear Algebra)
- Mathematics 31AB (Discrete Mathematics)
- Probability/Statistics 107 (Discrete Probability)

Upon completion of the pre-major courses with the necessary grade point average, the student should complete a change of major petition, available in the office of the Department of Computer Science, 2111 Engineering Building, and obtain the appropriate endorsement. At that time, the student must declare his/her intention to pursue either a Bachelor of Arts degree (through the College of Letters and Science) or a Bachelor of Science degree (through the

College of Engineering).

Students who wish to earn a Bachelor of Arts degree in Computer Science will then be required to complete the following courses.

Upper Division Major - Bachelor of Arts

The following courses are required for a total of 48 upper division units

- Computer Science 130AB (Data Structures and Algorithms)
- Computer Science 110 (Numerical Computations)
- Computer Science 120A (Automata and Formal Language)
- Computer Science 120B (Theory of Computation)
- Electrical Engineering 152A (Logic Design and Components of Digital Systems)
- Computer Science 154 (Computer Architecture)
- Computer Science 160A (Translation of Programming Languages)
- Computer Science 170 (Operating Systems)
- Probability/Statistics 121A (Probability and Statistics for Computer Science)
- Electives: at least 8 units of upper division major field electives must be completed. Prior approval of the student's advisor is required.

Courses taken to meet major or pre-major requirements, lower division or upper division, in or outside of the Department of Computer Science, must be completed on a letter-grade basis.

For additional information concerning the programs in Computer Science, please see the entry of the Department of Computer Science in the College of Engineering, which describes departmental facilities, career opportunities, and graduate study.

COLLEGE OF CREATIVE STUDIES

(See Chapter K)

Professors

Peter Racine Fricker, F.R.C.O., *Royal College of Organists, London; music.*
 Marvin Mudrick, Ph.D., *UC Berkeley; literature (Provost, College of Creative Studies).*
 Guenter Ahlers, Ph.D., *UC Berkeley; physics.*
 Stanton J. Peale, Ph.D., *Cornell University; physics.*
 Ian K. Ross, Ph.D., *McGill University; biology.*
 Alan Stephens, Ph.D., *University of Missouri; literature.*
 Beatrice Sweeney, Ph.D., *Radcliffe College; biology (Associate Provost, College of Creative Studies).*
 Adrian Wenner, Ph.D., *University of Michigan; biology.*

Adjunct Professor

Paul H. Lee, A.B., *Harvard College; physics.*

Associate Professors

David Cannell, Ph.D., *Massachusetts Institute of Technology; physics.*
 Horia I. Metiu, Ph.D., *Massachusetts Institute of Technology; chemistry.*
 Martin Scharlemann, Ph.D., *UC Berkeley; mathematics.*

Lecturers

Michael Cochran, Visiting Lecturer M.F.A., *Claremont Graduate School; art.*
 Athanas Lolov, Ph.D., *UC Santa Barbara; music.*
 John McCracken, B.F.A., *California College of Arts and Crafts; art.*

General Studies

CS 10 • Group Interdisciplinary Studies (1-6) Staff

Group studies in an interdisciplinary area, supervised by a member of the faculty of the College of Creative Studies.

Art

CS 1 • Drawing and Painting (1-6) Staff

CS 2 • Themes (1-6) Staff
 Drawing and painting in sequences, and according to themes.

CS 3 • Murals (1-6) Staff

CS 4 • Prints (1-6) Staff
 Classical graphic media (e.g., etching and lithography) and modern technological media (e.g., photo-engraving and offset-lithography).

CS 10 • Graphic Study of the History of Graphic Ideas: Drawing (1-6) Staff

The surviving works of art from the Paleolithic period until now constitute an existing order that may be considered the proper material for study by aspiring draughtsmen and painters. Art CS 10 emphasizes drawing.

CS 11 • Graphic Study of the History of Graphic Ideas: Painting (1-6) Staff

The surviving works of art from the Paleolithic period until now constitute an existing order that may be considered the proper material for study by aspiring draughtsmen and painters. Art CS 11 emphasizes painting.

CS 15 • Student-Conducted Seminar (1-6) Staff

The student, having prepared material which the adviser judges adequate in depth and significance, delivers it as a quarter course to other

Hank Pitcher, B.A., *UC Santa Barbara; art.*
 Charles Ryavec, Ph.D., *University of Michigan; mathematics.*
 Max Schott, M.A., *UC Santa Barbara; literature.*
 David Trowbridge, M.A., *California State University, Fresno; art.*
 Paula Yurkanis, Ph.D., *University of Virginia; chemistry.*

Correspondence information

College of Creative Studies, University of California, Santa Barbara, California 93106. Phone: (805) 961-2364.

Creative Studies Courses

Enrollment in any course in the College of Creative Studies requires the consent of the instructor. There is no pre-enrollment for CCS courses. Students enroll by obtaining a class card from the instructor at the first meeting of the class. Further information, including listings and detailed descriptions of courses, is available at the College of Creative Studies Office. The following list consists of kinds of courses offered in the College: Art CS 1, for instance, is "Drawing and Painting". In any quarter there might be as many as twenty sections, each a different course, e.g. "Abstract Painting", "Figure Drawing", etc. Since these courses are arranged and scheduled after the Schedule of Classes has been printed, interested students should inquire about CCS courses a few weeks before the beginning of each quarter.

students concentrating in the same field of study. The student instructor will be supervised and graded by the adviser. Students taking the course will receive credit for Art CS 1, and their work will be graded by the adviser in consultation with the student instructor.

CS 20 • Sculpture (1-6) Staff

CS 21 • Bronze Casting (1-6) Staff
 Studies in bronze casting, with special emphasis on the lost-wax process.

CS 50 • Elements of Film-making (1-6) Staff
 Introduction to theory and technique of film-making.

Biology

CS 1 • Models and Experiments (1-6) Staff
 Interplay between models and experimentation in the development of an understanding of the principles of biology.

CS 2 • Laboratory Project (1-6) Staff

Set up by the student in consultation with the instructor, and concluding with the student's report of progress

CS 3 • Reading Project (1-6) Staff

Set up by the student in consultation with the instructor, and concluding with the student's report of progress.

CS 10 • Student-Conducted Seminar (1-6) Staff

The student, having prepared material which the adviser judges adequate in depth and significance, delivers it as a quarter course to other students concentrating in the same field of study. The student instructor will be supervised and graded by the adviser. Students taking the course will receive credit for Biology CS 1, and their work will be graded by the adviser in consultation with the student instructor.

Chemistry

CS 1 • Major Unsolved Problems (1-6) Staff

Study of some of the major unsolved problems in chemistry, with the aim of developing general experimental and theoretical approaches to these problems.

CS 2 • Project (1-6) Staff

Investigation of a specific problem in chemistry, set up in consultation with the instructor, and concluding with the student's report of progress

CS 3 • Seminar (1-6) Staff

Presentation and critical discussion of reports on original projects.

CS 4 • General Chemistry Seminar (1-6) Staff

Accelerated course in general chemistry.

CS 5 • Physical Chemistry Seminar (1-6) Staff

Accelerated course in elementary physical chemistry.

CS 6 • Organic Chemistry (1-6) Staff

Accelerated course in elementary organic chemistry.

CS 10 • Student-Conducted Seminar (1-6) Staff

The student, having prepared material which the adviser judges adequate in depth and significance, delivers it as a quarter course to other students concentrating in the same field of study. The student instructor will be supervised and graded by the adviser. Students taking the course will receive credit for Chemistry CS 1, and their work will be graded by the adviser in consultation with the student instructor

CS 14 • Inorganic Laboratory Techniques (1-6) Staff

Advanced course in inorganic chemistry emphasizing laboratory techniques.

CS 15 • Theoretical Chemistry Seminar (1-6) Staff

Course in theoretical physical chemistry emphasizing quantum mechanics.

CS 16 • Organic Laboratory Techniques (1-6) Staff

Accelerated course in organic laboratory techniques.

Literature

CS 1 • Writing: Verse (1-6) Staff**CS 2 • Writing: Narrative Prose** (1-6) Staff**CS 3 • Writing: Expository Prose** (1-6) Staff**CS 10 • Genres** (1-6) Staff**CS 11 • Literary Structure: Chronological** (1-6) Staff Narrative.**CS 12 • Literary Structure: Non-Chronological** (1-6) Staff

Logical, analogical, cyclical and repetitive schemes.

CS 13 • Subjects and Materials (1-6) Staff**CS 14 • Themes and Motifs** (1-6) Staff**CS 15 • Student-Conducted Seminar** (1-6) Staff

The student, having prepared material which the adviser judges adequate in depth and significance, delivers it as a quarter course to other students concentrating in the same field of study. The student instructor will be supervised and graded by the adviser. Students taking the course will receive credit for Literature CS 13, and their work will be graded by the adviser in consultation with the student instructor.

Mathematics

CS 1 • Problem Solving (1-6) Staff

Discussion and solution of non-routine mathematical problems.

CS 2 • Project (1-6) Staff

Set up by the student in consultation with the instructor, and concluding with the student's report of progress.

CS 3 • Modern Algebra (1-6) Staff

Groups; modules; vector spaces; algebras; metric structures on vector spaces; representation theory; multilinear algebra, graded structures; universal properties; a survey of important algebraic structures.

CS 5 • Computer Applications (1-6) Staff

Applications of the various campus computers to problems in mathematics biology, chemistry, and physics.

CS 10 • Student-Conducted Seminar (1-6) Staff

The student, having prepared material which the adviser judges adequate in depth and significance, delivers it as a quarter course to other

students concentrating in the same field of study. The student instructor will be supervised and graded by the adviser. Students taking the course will receive credit for Mathematics CS 1, and their work will be graded by the adviser in consultation with the student instructor.

CS 20 • Special Topics (1-6) Staff**CS 40 • Introduction to Mathematical Problems** (1-6) Staff

Several non-trivial solved and unsolved mathematical problems are considered which require a minimal background. These include tiling and network problems the solutions of which are ultimately useful in the natural sciences. May be taken as often as once per quarter.

Music

CS 1 • Composition (1-6) Staff**CS 2 • Analysis: Materials** (1-6) Staff**CS 3 • Analysis: Forms** (1-6) Staff**CS 4 • Aural Disciplines** (1-6) Staff**CS 5 • Special Topics** (1-6) Staff**CS 6 • Computer Applications** (1-6) Staff

Applications of the various campus computers to problems in music.

CS 15 • Student Conducted Seminar (1-6) Staff

The student, having prepared material which the adviser judges adequate depth and significance, delivers it as a quarter course to other students concentrating in the same field of study. The student instructor will be supervised and graded by the adviser. Students taking the course will receive credit for Music CS 1, and their work will be graded by the adviser in consultation with the student instructor.

Physics

CS 1 • Seminar (1-6) Staff

Group study, with regular reports delivered by students on subjects assigned and directed by the instructor.

CS 2 • Laboratory Project (1-6) Staff

Set up by the student in consultation with the instructor, and concluding with the student's report of progress.

CS 3 • Reading Project (1-6) Staff

Set up by the student in consultation with the instructor, and concluding with the student's report of progress.

CS 10 • Student-Conducted Seminar (1-6) Staff

The student, having prepared material which the adviser judges adequate in depth and significance, delivers it as a quarter course to other students concentrating in the same field of study. The student instructor will be supervised and graded by the adviser. Students taking the course will receive credit for Physics CS 1, and their work will be graded by the adviser in consultation with the student instructor.

Dance

Associate Professor

Rona Sande, M.Ed., *College of William and Mary, Juilliard School of Music; modern technique, aesthetics, criticism, choreography, production, (Director).*
 — —, *Modern technique, repertory, production.*

Assistant Professor

Alice Condodina, B.A., *Temple University, Juilliard School of Music; modern technique, labanotation, production choreography and repertory.*

Lecturer

— —; *modern technique, ballet.*

Guest Lecturer in Dance: In addition to the regular faculty, the Division of Dance appoints professional artists in Dance on a one quarter basis. Recent appointees (1979-80) have been: Betty Walberg, Rudy Perez, Tonia Shimin.

Concerns of the department

The Division of Dance offers an area of specialization within a liberal arts education which can also serve as preparation for professional work. The emphasis of the program is upon performance/choreography with a strong concentration on modern dance. Repertory-West Dance Company is the professional modern dance company in residence at UCSB. Apprentices for the company are selected from students of the Dance Department. Course offerings are geared to include the theoretical and technical aspects of dance, as well as a breadth of experience in related arts and sciences. Students who are interested in securing teaching credentials should confer with the Director of Dance regarding the completion of additional requirements.

Departmental advising

It is strongly recommended that all new and continuing students meet with their department adviser. Advising for undergraduates is handled in the Department office by Miss Patricia Peters. Audition material, a brochure indicating course offerings and major requirements, and faculty background information are available by writing to Miss Peters. Transfer students are advised by Ms. Rona Sande.

Admission audition

Students desiring to attend UCSB as Dance majors must

take an audition for placement in the technique series Dance 46A—F and 156A—F. This is a four year series. Portions of the requirement may be waived according to the results of the entrance audition. Students not able to qualify for Dance 46A, as determined by the entrance audition, will not be able to declare a dance major until such time as they are able to qualify for that class. Auditions will be held in May of the year preceding a student's admission to the University. They will be offered again during Registration Week in the Fall for those students unable to attend the Spring auditions. It must be understood, however, that there can be no guarantee of admittance into the program until the audition has been taken and successfully passed. Since the number of students that can be accepted each year is limited, it is advisable that students attend the Spring audition, if at all possible, in order to reserve a place in the program. Audition details may be obtained by writing directly to the Division of Dance.

Bachelor of Arts

For completion of the Bachelor of Arts degree in Dance the student must complete 180 units of University work, including all requirements as outlined by the College of Letters and Science in section M and the major courses as outlined below. Technical ability and theoretical knowledge must be demonstrated to the satisfaction of the Dance faculty before entrance to upper division dance study.

Preparation for the major

Required:

Dance **46A—B—C** • **Modern Dance**
 Dance **46D—E—F** • **Intermediate Modern Dance**
 Dance **47D—E—F** • **Intermediate Ballet**
 Dance **52** • **Labanotation**
 Dramatic Art **23** • **Stage Lighting**
 Dramatic Art **49** • **Theatre Workshop** (4 units)
 Music **11** • **Fundamentals of Music**
 Zoology **25 and 25L** or • **Human Anatomy 40 and 40L** • **Human Physiology**

One course from the following: **Art History 1** or **150**, **Dramatic Art 60** or **Music 15**.

Upper Division major

Required:

Dance **145A—B** • **The Historical Development of Dance**
 Dance **149** • **Dance Workshop**
 Dance **151A—B** • **Choreography**

Dance **151C** or • **Choreography**
151D or • **Environmental Choreography**
151E • **Choreography for the Theatre**
 Dance **154** • **Accompaniment for Dance**
 Dance **156A—B—C** • **Advanced Modern Dance**
 Dance **156D—E—F** • **Continuing Modern Dance**
 Dance **157** • **Criticism and Analysis**

Six additional units selected from: Dance 148 (Summer Dance Repertory), 149 (Dance Workshop), 150 (Historical Dance Forms), 151C (Choreography) or 151D (Environmental Choreography) or 151E (Choreography for the Theatre)—whichever is not used above, 153 (Ethnic Dance Forms), 158 (Theory of Dance), 160 (Dance Repertory), 161 (Jazz and Theatre Forms), 162 (Aesthetics of Dance), 190 (Apprenticeship-Repertory West Dance Company), 194 (Group Studies in Dance), 199 (Independent Studies in Dance), and Dramatic Art 149 (Theatre Workshop).

It is recommended that the entering student contact the Dance faculty for program planning advice before enrolling, in order to insure the best possible sequence of study.

Career opportunities

The B.A. degree in dance prepares a student for further

professional study toward a performing career. It is also the first step toward a career in teaching. Graduates can open their own studios of dance or can teach in private schools or colleges, although a Master's or Doctoral degree is required, in most instances, for a job in a public college or university. The B.A. in dance is also preparation for the Teaching Credential program which is a requisite for high school teaching.

Teaching credentials

Students who complete the major in Dance may be eligible for pursuing a California teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education. Education-Advising Office, Room 1180 Phelps Hall.

Correspondence information

Patricia Peters, Division of Dance, University of California, Santa Barbara, California 93106. Phone: (805) 961-3241.

Dance

Lower Division courses

40 • Summer Ballet (2)
 Fundamentals of ballet techniques. (SS)

41 • Summer Modern Dance (2)
 Fundamentals of modern dance techniques. (SS)

42A—B—C • Fundamentals of Ballet Technique (1-1-1)
 An introduction to the elements of ballet. Courses must be taken in sequence.

44A—B—C • Elementary Movement Technique (1-1-1)
 An introduction to the technical aspects of movement as an expressive medium. Course must be taken in sequence.

45 • History and Appreciation of Dance (4) [C]
 Introduction to dance as an art form. A study of the historical periods of dance in close relationship to the other forms of cultural expression. (F,W,S)

45M • History of Musical Comedy Dance. (4) [C]
 An investigation into the origins and development of musical comedy and jazz dance. The precursors in folk dance, vaudeville, and tap will be studied leading to their influence on the important choreographers on Broadway and in the film musical.

46A • Modern Dance (3)
 Analysis and exploration of the technical aspects of movement as an expressive medium. Includes special emphasis on the temporal aspects of dance. (F)

46B • Modern Dance (3)
Prerequisite: Dance 46A.
 Analysis and exploration of the technical aspects of movement as an expressive medium. Includes the study of basic musical forms as they relate to dance, with an emphasis on themes and phrases. (W)

46C • Modern Dance (3)
Prerequisite: Dance 46B.
 Analysis and exploration of the technical aspects of movement as an expressive medium. Includes work in the area of improvisation. (S)

46D—E—F • Intermediate Modern Dance (3-3-3)
Prerequisite: Dance 46C.

Analysis and exploration of the technical aspects of movement as an expressive medium at the intermediate level. (F,W,S)

47A—B—C • Elementary Ballet (2-2-2)
 Analysis and exploration of technical expressive elements of the ballet. (F,W,S)

47D—E—F • Intermediate Ballet (2-2-2)
Prerequisite: Dance 47C or audition by dance faculty.

Further analysis and exploration of technical and expressive elements of ballet. (F,W,S)

51 • Improvisation (3)
Prerequisite: Dance 46C or consent of instructor.
 The understanding and development of aesthetic awareness in movement through the use of body tensions and energy.

52 • Labanotation (4)
 Study of the elements of dance notation and interpretation of movement through reading and writing of the dance score culminating in Elementary Labanotation Certification.

54 • Choreutics (3)
Prerequisite: Dance 46C.
 Analysis and study of the special aspects of movement as seen in the research of Rudolf von Laban. Course material designed to stimulate movement experimentation.

Upper Division courses

145A • The Historical Development of Dance (4) [C]
Prerequisite: Upper Division standing or consent of instructor.
 The study of dance as a reflection of cultural history. The history of theatrical dance from the Renaissance through the 19th century.

145B • The Historical Development of Dance (4) [C]
Prerequisite: Upper Division standing or consent of instructor.
 The study of dance as a reflection of cultural history. The dance in the 20th century.

147A—B—C • Advanced Ballet (2-2-2)
Prerequisite: Dance 47F or consent of instructor.
 Advanced analysis and exploration of the technical and expressive elements of ballet. (F,W,S)
 May be repeated for credit but only one repetition of each may be counted toward the major.

148 • Summer Dance Repertory (1-6)
Prerequisite: Consent of instructor after audition.
 A repertory dance theatre laboratory; the study of contemporary choreographic works culminating in a concert. May be repeated for up to 12 units of credit. (SS)

149 • Dance Workshop (1-4)
Prerequisite: Consent of instructor.
 Projects in performance, production, choreography and directing. May be repeated for credit.

(Will not count as Upper Division units for the major when taken by Freshmen and Sophomores.) (F,W,S)

150 • Historical Dance Forms (3) [C]

Prerequisites: Dance 46C or 47C. Open to Drama Majors with consent of instructor.

Analysis of period styles in dance as reflected in theatrical practice from the Pre-Classical through the 19th Century. Course will include practice in the execution of the particular dance forms studied.

151A—B—C • Choreography (3-3-3)

Prerequisite: Dance 46F.

Analysis of the elements of choreographic form: styles and trends with experience in development of dance studies; theory and technique of advanced group choreography.

151D • Environmental Choreography (3)

Prerequisites: Dance 151B and Upper Division standing.

A process oriented study of scoring, designing and performing dance works in natural landscapes.

151E • Choreography for the Theatre (3)

Prerequisites: Dance 151B and Upper Division standing.

A study of the choreographic problems encountered in theatrical assignments. Analysis of three major theatrical works in terms of choreographic movement style and design.

153 • Ethnic Dance Forms (3)

Prerequisites: Dance 46F or 47F and Upper Division standing.

Analysis of the distinctive qualities and characteristics of particular forms of ethnic dance with consideration given to cultural effects on the Americas. May be repeated for up to nine units of credit, with permission of Department Director.

154 • Accompaniment for Dance (3)

Study in accompaniment for dance, including music sources, improvisation, percussion and sound experimentation.

155 • Organization of Dance Production (3)

Prerequisite: Consent of instructor.

Theory and techniques of organization, direc-

tion and production of the public dance performance.

156A—B—C • Advanced Modern Dance (3-3-3)

Prerequisites: Dance 46F and audition by Dance faculty.

Advanced analysis and exploration of the technical aspects of dance as an expressive medium. (F,W,S)

156D—E—F • Continuing Modern Dance (3-3-3)

Prerequisite: Dance 156C.

Further analysis and exploration of the technical aspects of dance as an expressive medium. May be repeated for credit but only one repetition of each may count toward the major. (F,W,S)

157 • Criticism and Analysis (3)

Prerequisite: Consent of instructor.

Advanced analysis of choreographic works with practical application in viewing, reviewing and criticism. (S)

158 • Theory of Dance (3)

Prerequisites: 46F, 151A.

History and theory of dance. An examination and analysis of the literature and materials of dance with practical study in the leading of group movement experiences.

160 • Dance Repertory (2)

Prerequisite: Dance 156A or consent of instructor.

The study and performance of major choreographic works. May be repeated up to 12 units of credit.

161 • Jazz and Theatre Forms (2)

Prerequisite: Dance 46F or 47F.

Jazz as an expressive idiom and dance utilized in theatrical and music productions.

162 • Aesthetics of Dance (4)

Prerequisite: Dance 157.

A critical analysis of aesthetic concepts related to dance.

190 • Apprenticeship-Repertory Dance Company (2-4)

Prerequisite: Consent of instructor.

Special course for selected students as apprentices to Repertory-West Dance Company. Students will study and analyze the choreographic art in the repertory, understudy the works and upon occasion, perform with the company locally or on tour. Course will provide students with the opportunity to observe and experience firsthand the integral workings of a professional. May be repeated for credit, but no more than 8 units may count toward the major.

194 • Group Studies in Dance (1-4)

Prerequisites: Consent of instructor and department.

Group projects in selected areas of emphasis. Enrollment normally limited to 12 or fewer students.

***199 • Independent Study in Dance (1-5)**

Prerequisites: Consent of instructor and department.

Projects in choreography or dance research. 199 Courses are limited to no more than five units in one quarter and no more than 12 units total. (F,W,S)

Related courses in Education

390 • Curriculum and Instructional Procedures and Materials Used in the Teaching of Dance (3)

Prerequisite: Major or minor in dance and consent of instructor.

A study of the basic principles of teaching dance; includes an examination and analysis of the literature and materials of dance education.

392A—B—C • Student Teaching in Dance (4-4-4)

Prerequisite: Admission to credential program.

393 • Problems Seminar in the Teaching of Dance (1)

Prerequisite: Concurrent enrollment in Ed. Dance 392 series.

*See N-2 for 198/199 Independent studies unit limitations.

Dramatic Art

Professors

Stanley L. Glenn, Ph.D., *Stanford University; acting, directing (Chairperson).*
 William R. Reardon, Ph.D., *Stanford University; dramatic literature, criticism.*
 Bert States, D.F.A., *Yale University; dramatic literature, theory.*

Associate Professors

¹Robert G. Egan, Ph.D.,
Stanford University; dramatic literature, criticism.
 John D. Harrop, Ph.D., *UC Santa Barbara; acting, directing.*
 Peter Mark, M.S., *Juilliard School of Music; Music Theatre.*
 Robert Potter, Ph.D., *Claremont Graduate School; medieval drama, playwriting.*

Lecturers

Marie W. Starr, M.A., Visiting Lecturer *UC Santa Barbara; theatre for young audiences.*
 Leland K. Strasburg, M.F.A., *University of Utah; scenic and lighting design.*
 —, *Costume design.*

Professors Emeriti

Theodore W. Hatlen, Ph.D., *Stanford University.*
 Lucille H. Woolsey, Ph.D., *Purdue University.*

Concerns of the department

The major in Dramatic Art provides a liberal arts education and preparation for professional or educational work in theatre. The Bachelor of Arts degree provides a strong background in theatre arts and dramatic literature with requirements and/or electives in all major areas: acting, directing, design and technical theatre, literature, criticism, theatre history, children's theatre, playwriting, and theatre management. The program provides ample opportunities for participation in play production and workshop activities in three campus theatres. Students are free to select their preferred area of emphasis, which includes acting, directing, design and technical theatre, and the general major.

Departmental Advising

Departmental advising for undergraduates is handled primarily in the Department office by Miss Pat Peters. When an undergraduate has selected an emphasis, Miss Peters will have the student consult with a faculty member in the emphasis area as well. Transfer students are advised by

Dr. Glenn. Graduate advising is handled by Dr. States and Dr. Egan.

Bachelor of Arts

Pre-enrollment for many Dramatic Art courses takes place in the Department Office rather than through normal pre-enrollment procedures. (Check the *Schedule of Classes* each quarter.) Students must meet the General Education requirements as outlined in section M of this catalog. All Dramatic Art majors must complete the required core courses as noted below.

Auditions

Auditions for the departmental productions usually will be held the first week of each quarter. Audition material and information may be picked up at the Dramatic Art Production Office at the end of the previous quarter.

Preparation for the Major

Lower division major

Required: (Regardless of Emphasis)
Dramatic Art

5 • Introduction to Acting
20 • Survey of Technical Theatre
***49 • Theatre Workshop**
60 • The Understanding of Drama
61 • Dramatic Structure

Transfer students may substitute D.A. 120 (Survey of Theatrical Techniques) and D.A. 163 (World Drama and Theatre) for D.A. 20 and 60, respectively.

Upper Division major

Required: (Regardless of Emphasis) A minimum of 36 upper division Dramatic Art units, including

Dramatic Art

***149 • Theatre Workshop**

153A • Stage Direction (or **153AD** for Directing Emphasis students)

160A • Development of Dramatic Art (must be taken Spring Quarter of the Sophomore year.)

160E • Development of Dramatic Art

162 • Shakespeare on Film and Stage, or/English 117A or B

At least two courses from the following:

102 • History of the Theatre

106 • Dramatic Theory and Criticism

155 • American Drama

160B—C—D—F • Development of Dramatic Art

*A minimum of 6 units from the Dramatic Art 49—149 series is required. At least 1 unit must be taken in each of the following areas: costume construction, set construction, and run crew by the end of the sophomore year.

¹ On leave Fall 1980.

164 • Music Theater**EMPHASIS PROGRAMS**

Students may select any one of the following areas of emphasis: Acting, Directing, Design and Technical Theatre, or the General Major.

I. Acting Emphasis

This emphasis must be declared upon completion of Dramatic Art 15A. This is a highly selective program which is geared toward preparation for the professional theater, or for students who wish to qualify for MFA programs in acting. Auditions are required for entrance to Dramatic Art 15A. Upon completion of Dramatic Art 15A, and with the recommendation of the instructor, the acting emphasis must be declared. Passage to Dramatic Art 15B and C is determined by the acting staff, which will base its judgement upon (1) demonstration of the student's professional commitment to the program, and (2) clear demonstration of potential talent in the field. Passage to advanced acting (Dramatic Art 151A) uses similar criteria, but more stringent judgement is applied.

Transfer students who wish admission into the Acting Emphasis Program must audition during registration week in the Fall. Depending upon the satisfaction of prerequisite requirements and the quality of auditions, they will be placed either in the Dramatic Art 15A, B, C series (intermediate acting), or in the Dramatic Art 151A, B, C series (advanced acting). Audition material should include two memorized selections not to exceed three minutes each. One piece should be of a serious nature, and the other comic. Shakespeare and classic selections are to be avoided. Contact should be made with the department office regarding information about the times and dates of auditions. More detailed information about the program is available by request from the Department of Dramatic Art. The following Dramatic Art courses are required:

- 11ABC • Voice and Movement Laboratory (Must be taken concurrently with 15A, B, C)
- 12 • Fundamentals of Mime
- 15ABC • Fundamentals of Acting
- 26 • The Art and Craft of Stage Makeup
- 111ABC • Advanced Voice and Movement Laboratory (Must be taken concurrently with 151 A,B,C)
- 151A • Advanced Acting: Tragic Style
- 151B • Advanced Acting: The Craft of Comedy
- 151C • Advanced Acting: Modern Trends
- 153C • Techniques of Directing: Laboratory
- 153E • Senior Projects

Eight additional units of related courses worked out with adviser, and

Dance 150 • Historical Dance Forms

Physical Activities 1—18D. Theatrical Fencing

II. Directing Emphasis

This emphasis normally is declared at the beginning of the Junior year. It may be declared at the beginning of the Senior year provided all prerequisites are satisfied and permission of the directing faculty is granted.

The following Dramatic Art courses are required:

- 15A • Fundamentals of Acting
- 22 • Scenic Design
- 23 • Stage Lighting Design
- 151A • Advanced Acting: Tragic Style
- 151B • Advanced Acting: The Craft of Comedy
- 151C • Advanced Acting: Modern Trends
- 153AD • Projects in Directing
- 153C • Techniques of Directing: Laboratory
- 153D • Projects in Directing
- 153E • Senior Projects
- 154 • Opera Directing

Eight additional units of related courses worked out with adviser, and

Physical Activities 1-18D. Theatrical Fencing

III. Design and Technical Theatre Emphasis

This emphasis must be declared by the Junior year.

The following Dramatic Art courses, or an equivalent, are required and prerequisite to any advanced Design/Technical course. They should be completed before the Junior year:

- 21 • Technical Theatre Production
- 22 • Scenic Design
- 23 • Stage Lighting Design
- 25 • Costume Design
- 26 • The Art and Craft of Stage Makeup
- 27 • Theatre Graphics
- 31 • Basic Costume Construction and Pattern Drafting

At least four Dramatic Art courses from the following are required. Previous students who are succeeding vocationally or in graduate schools elected to complete seven of them.

- 121 • Advanced Technical Theatre Production
- 122 • Advanced Scenic Design
- 123 • Advanced Stage Lighting Design
- 125 • Advanced Costume Design
- 127 • Problems in Technical Theatre
- 128 • Advanced Production Design
- 131 • Advanced Costume Construction
- 133 • History of Costume

Playwriting Program

IV. The Playwriting Program is based around a year-long course, Dramatic Art 104A,B,C, and includes visiting lectures and public readings, a yearly awards program, an annual Spring Workshop where students' works-in-progress are presented, and periodic departmental productions of original plays—all dedicated to the invention and realization of student-written scripts.

- 22 • Scenic Design
- 23 • Stage Lighting Design
- 104A • Playwriting: An Introductory Course
- 104B • Advanced Playwriting
- 104C • Script Workshop
- 106 • Dramatic Theory and Criticism
- 153B • Techniques in Directing

V. General Emphasis

This emphasis may be declared at any time. It consists of individual programs of study in the areas of Children's

Theatre, Dramatic Literature, Dramatic Theory and Criticism, or Interdisciplinary Studies in Drama (Comparative Dramatic Literature, Film, Social Sciences, Philosophy, Fine Arts, etc.). Students must work out a program of 28–35 units under the supervision of an assigned faculty advisor.

Master of Arts Program

The Master of Arts Program is designed to provide a broad background for work in educational or professional theatre or in preparation for further study in a doctoral program or teaching credential program.

Departmental Requirements:

Forty-eight units are required for the Master's Degree. At least twenty-eight of these must be taken in graduate courses numbered 200 and above. Either of these units involve a master's thesis project. Furthermore, eight of the units must be from the 235 sequence with at least 3 units from 235C. At the completion of the class work, a one and half hour oral examination on material covered in the program and project is required. Only students who have clearly revealed their scholarly and creative ability at the end of the M.A. program will be permitted to continue on to the doctoral program. Required Coursework: D.A. 200 (Required in the Fall quarter) D.A. 598AA—ZZ (eight units) Five courses (20 units, at least 8 above 200) from D.A. 102, 103, 106, 146, 148, 155, 160A—F, 162, 210A—F, 255, 272A—G, 294 Four courses (16 units, at least 8 from 235A–C) from 101A—B, 104A—C, 120, 121, 122, 123, 125, 127, 131, 132, 133, 140, 141, 149, 151A—C, 153A—D, 191, 194, 235A—C.

Oral examination of 1 1/2 hours on materials covered in course of study and on research or production project.

Only students who have clearly revealed their scholarly and creative ability will be permitted to undertake doctoral work. The faculty will make this decision at the conclusion of the M.A. program.

Graduate Students, with the approval of the program director, may undertake playwriting projects in partial fulfillment of M.A. degree requirements. M.A. applicants with an interest in playwriting are encouraged to submit a sample of their work at the time of application c/o Playwriting Program Director, Department of Dramatic Art.

Doctor of Philosophy

General requirements for admission to graduate status must be fulfilled.

Departmental requirements: To be eligible for admission to the doctoral program candidates must hold a completed M.A. degree, either from this university or another institution.

Normally a heavy sequence of courses in dramatic literature, theory and criticism will be taken, over a period of two years. At the end of the second year or the start of the third, the candidate must pass departmental written and oral examinations in dramatic literature, dramatic theory and criticism, history and theory of acting and directing, and a special area of interest as well as the University oral examination. Upon successful completion of these examinations, the student will be recommended for advancement to candidacy.

Prior to taking the comprehensive examination, the candidate must also complete the language requirement. There are three options for fulfillment of the language requirement. Option 1: Two languages at reading level (ETS Graduate Foreign Language Tests). One language must be French, German, or Russian. Option 2: Any foreign language needed for doctoral research may be pursued to a level of oral and written proficiency. Such proficiency will be attested by the appropriate foreign language department which will administer the test. Option 3: A student may elect not to offer a language but to offer instead a series of breadth or depth courses effectively tailored to individual needs by the Graduate Advisor and approved by the Graduate Division. No dissertation utilizing materials in another language would be possible under Option 3.

The third year will normally be spent in the research, and writing of the dissertation. Approximately 36 units will be devoted to dissertation work.

Doctoral candidates must have experience as Teaching Assistants in Dramatic Art.

Teaching Credentials

Students who complete a major in Dramatic Art may be eligible for pursuing a California teaching credential. A student intending to secure a credential should confer with designated counselors in the Department of Dramatic Art and the School of Education.

Since students who wish to teach Drama or Theatre Arts at the Junior or Senior High School level in California must obtain a credential in English, such prospective teachers should consult with the credential adviser in the Department of English early in their Senior year. Please note that Linguistics 160 is required for all secondary credential candidates in English.

Specific details of State and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180, Phelps Hall.

Students interested in a community college instructor's credential and the related professional preparation program should contact the Education-Advising Office, as noted above, prior to the fall quarter in the year in which the advanced degree will be completed.

Career Opportunities

People with a dramatic art major may lean toward a professional career in theater, television or films. A large number tend to go into teaching careers at all levels. Some move into community theatre activities or involvement in industrial theater. A few will probably get involved in government activities such as "The Voice of America." Some have used dramatic art more as a vital part of their training toward attaining self-assurance and confidence for professions not directly aligned to theater—law, the ministry or business.

Correspondence Information

Department of Dramatic Art, Speech and Drama Bldg., Room 2641, University of California, Santa Barbara, California 93106. Phone (805) 961-3241.

Dramatic Art

Lower Division courses

5 • Introduction to Acting (3)

An introduction for majors and non-majors to the multiple problems of the actor's art and craft.

6S. Acting Workshop. (2) Summer Session.

Laboratory for work in voice, movement, improvisation and personal exploration.

10A—B—C Movement For The Stage. (1-1-1)

Prerequisites: Completion of Dramatic Art 5; concurrent enrollment in Dramatic Art 15A, B, C. Specialized training and exercise in movement for the stage. Emphasis on movement technique, body strengthening, and imagination.

11A—B—C • Voice and Movement Laboratory (1-1-1)

The fundamental crafts of Voice and Movement for the actor with emphasis on vocal production, articulation, and quality; body posture, balance, and flexibility. Must be taken by those enrolled in D.A. 15A—B—C but may also be taken independently of 15A—B—C, with consent of the instructor.

12 • Fundamentals of Mime (3)

Practical experience in traditional forms and experimental work in creative studies in mime.

13. Musical Theatre Workshop. (2)

Prerequisites: Dramatic Art 15B and consent of instructor.

Integration of the art of acting with singing, movement, and dance through the medium of music theatre. For acting emphasis students only.

14 • Acting Workshop. (3)

Prerequisites: Dramatic Art 5. Course restricted to sophomores and above.

Exploration, performances and criticism of scenes from a broad range of dramatic scripts with the stress upon the actor's perspective. Practical skills will be taught to make the physical exploration of the text a valid exercise. Designed for non-specialists in drama.

15A • Fundamentals of Acting (3)

Prerequisites: Dramatic Art 5 Recommendation and by Audition

Basic work in voice, movement, and improvisation to develop the beginning actor's understanding and artistic growth. Dramatic Art 11A must be taken in conjunction with this course. (F)

15B • Fundamentals of Acting (3)

Prerequisites: Dramatic Art 15A and consent of instructor.

Problems in scene analysis, characterization and presentation. Student must take Dramatic Art 11B in conjunction with course. (W)

15C • Fundamentals of Acting (3)

Prerequisites: Dramatic Art 15B and consent of instructor.

Further development of characterization, interpretation, and concepts of emotion in acting. Student must take Dramatic Art 11C in conjunction with this course. (S)

20 • Survey of Technical Theatre. (4)

Survey of scenographic techniques including technical production, set, and costume design.

20S • Survey of Technical Theatre (3) Summer Session.

Survey of scenographic techniques including technical production, set, and costume design.

21 • Technical Theatre Production. (4)

Basic stagecraft technique including organization and operation of theatre facilities and stage equipment. Survey of production material.

22 • Scenic Design (4)

Prerequisite: DA 20 or DA 120 or consent of instructor.

Projects in the interpretation of plays through scenic elements with concentration on the tools of the designer, floor plans, renderings, models and elevations.

23 • Stage Lighting Design (4)

Lecture-demonstration in instrumentation, color in light, control equipment and basic lighting design theories. Practical application through laboratory assignments and participation in productions.

25 • Costume Design (4)

Exploration of basic elements of design (color, texture, line, mass, etc.), and rendering techniques in a series of weekly exercises related to specific dramatic literature texts.

26 • The Art and Craft of Stage Makeup (1)

Prerequisite: Priority to majors.

The materials of makeup. Application of juvenile, character, and period makeup for the stage.

27 • Theatre Graphics. (3)

Prerequisites: Dramatic Art 22 or consent of instructor.

Drawing for the theatre. Emphasis on: Orthographic and isometric, light and shade, perspective and line drawing, and water color technique.

31 • Basic Costume Construction and Pattern Drafting (3)

Fundamental construction techniques (seams, linings, interlinings, facings, closings, hand and finishing work); basic pattern drafting, cutting, fitting and construction (in muslin) of contemporary and period garments.

32 • Basic Textiles (4)

A study of fibers, fabric structures, and finishes as related to the properties, characteristics and behavior of textile fabrics.

49 • Theatre Workshop (1-6) Staff

Projects in costume, scenery, lighting, acting, directing. May be repeated for credit

60 • The Understanding of Drama (4) [C]

The general nature of dramatic presentation, including elements of dramatic structure, types of drama, the contributions of the actor, director, designer, technician, and audience. Films, video tapes, and live performances will be studied whenever possible.

60S • The Understanding of Drama. (3) Summer Session. [C]

The general nature of dramatic presentation, including elements of dramatic structure, types of drama, the contributions of the actor, director, designer, technician, and audience. Films, video tapes, and live performances will be studied whenever possible.

61 • Dramatic Structure. (3) [C]

The principles of dramatic form and structure as examined in a range of representative plays from ancient to modern times.

Upper Division courses

101A • Theatre for Young Audiences (2) Staff

Study of special techniques involved in producing plays for this audience. Analytical survey of writing, staging, and acting for young audiences including Story Theatre, Reader's Theatre, and creative dramatics. Content varies. May be repeated up to four hours of credit. (F)

101B • Theatre for Young Audiences (2) Staff

Class to produce a play for public performance. Highest professional standards demanded in all aspects of production. Content varies. May be repeated up to four hours of credit. (F)

101C • Creative Plays for Young Audiences (4) Staff

Prerequisites: D.A. 101A—B. Consent of instructor.

Creation of a play project by the class through creative dramatics and improvisational theatre techniques. Completed projects to be toured to schools in spring quarter. Content varies. May be repeated up to eight hours of credit. (W)

101D • Touring Plays for Young Audiences (4) Staff

Prerequisites: D.A. 101A—B—C. Consent of instructor.

Final rehearsal and preparation of completed project for tour. Will tour 10-12 elementary schools. Content varies. May be repeated up to eight hours of credit. (S)

102 • History of the Theatre (4) [C]

The history of the playhouse, the practitioner and dramatic production from the Greeks to the present.

*103 • Black Drama (3) [C]

Discussion of black drama and theatre in America treating the contribution and involvement of black artists in the drama and theatre in this country.

104A • Playwriting: An introductory Course (4)

Exploration of ideas for the stage. Experiments with mime, monologue, dialogue, scene. Characters and action. Resources of the stage, principles of economy. Analysis of scripts on paper and in production. A series of written assignments, and a final project (scenes from a work in progress). (F)

104B • Advanced Playwriting (4)

Prerequisites: Completion of 104A (or submission of written Material) and consent of the instructor

Development of selected student projects into completed working scripts, further studies in script analysis. Writing and re-writing. May be repeated up to eight hours of credit. (W)

104C • Script Workshop (1-4)

Prerequisite: Consent of instructor.

A. Playwriting workshop. Rehearsal and production of selected student scripts, in collaboration with student actors, director, etc. B. Media script workshop. Radio, film and video projects. May be repeated up to six hours of credit. (S)

***105A • Introduction to Chicano Theatre (3) [C]**

Prerequisite: Consent of instructor.

Focusing on basic concepts and techniques of Chicano Teatro, this course will explore the historical development of the Teatro form and experiment with various modes of realizing the acting styles and production techniques of the Teatro. As heavy emphasis will be placed on the particular acting problems involved students are urged to enroll simultaneously in DA 5.

***105B • Development of Chicano Theatre (3) [C]**

Prerequisite: Consent of instructor

With an intensive concentration on the preparation of Chicano theatre material for presentation this course will include the writing of Acts and plays; the exploration of improvisational techniques; the development of "open-ended" scenarios; and the creation of effective scenic, mask and costume techniques for Chicano theatre.

***105C • Chicano Theatre in Performance (3) [C]**

Prerequisite: Consent of instructor.

Utilizing the experience and materials created in DA 105A and B, a series of performance events will be moulded in four weeks of intensive rehearsal. The remainder of the quarter will be given to an extensive series of performances by the Teatro group, including presentation in schools, prisons, parks, community centers and theatres.

106 • Dramatic Theory and Criticism. (4) [C]

Prerequisites: Upper division standing.

Intensive discussion of several major theories of the drama and an application of those theories to selected plays.

110A—B—C • Movement for the Stage. (1-1-1)

Prerequisites: Completion of Dramatic Art 15A, B, C; concurrent enrollment in Dramatic Art 151A, B, C.

Specialized training and exercise in movement for the stage. Emphasis on movement technique, body strengthening, and imagination.

111A—B—C • Advanced Voice and Movement Laboratory (2-2-2)

Advanced problems in voice and movement for the actor with continued emphasis on craft, plus the creative and expressive uses of the voice and body. Must be taken by those enrolled in 151A—B—C, but may also be taken independent of 151A—B—C, with permission of the instructor.

111S • Advanced Voice Movement Workshop. (1) Summer Session

Workshop in voice and movement for members of the repertory ensemble.

115 • Repertory Theatre (1-6) Staff

Prerequisite: Consent of instructor

A summer repertory theatre workshop emphasizing styles of acting culminating in production. Enrollment by audition only. May be repeated up to 12 units of credit.

117 • Theatre in England (3) Glenn [C]

Designed to teach in depth and out of actual experience the relations between the scripts of great plays and the best available productions of these plays. Must be taken in conjunction with English 117A or B. (SS.)

120 • Survey of Theatrical Techniques (4)

Survey of scenographic techniques from Craig and Appia, with emphasis on contemporary methods in costume, scenery and lights. May not be taken by students who have taken Dramatic Art 20.

121 • Advanced Technical Theatre Production (4)

Prerequisites: DA 20 or 120, 21, 22, 23, and consent of instructor.

Advanced problems in planning, drafting, construction, mounting and rigging of stage scenery

122 • Advanced Scenic Design (4)

Prerequisite: D.A. 121 and Consent of instructor.

Concentration on set design problems of various styles. Projects to include perspective sketches, elevations and models. Recommended only to the most advanced students.

123 • Advanced Stage Lighting Design (4)

Prerequisites: DA 121 and consent of instructor.

Intensive work in lighting design plots with practical application of projects on stage.

125 • Advanced Costume Design (4)

Prerequisite: Consent of instructor.

Execution of costume design for Greek or Elizabethan text. Emphasis on conceptual bases and subsequent characterization. Recommended only to the most advanced students.

126S • Advanced Makeup. (1) Summer Session

Prerequisites: A Beginning Makeup Course.

Emphasis on character makeup and new application techniques.

127 • Problems in Technical Theatre (4)

Prerequisites: Consent of instructor.

Advanced technological research applied to special problems in theatrical design. Recommended only to the most advanced students.

128 • Advanced Production Design (3)

Prerequisites: DA 121, 122, 123, 125 and consent of instructor.

Study of total production design to include projects in costume, set and lighting design. Concentration on the concept of stylistic unity through the visual elements of dramatic production.

131 • Advanced Costume Construction (4)

Prerequisites: DA31 or consent of instructor.

Special projects in costume accessories. Construction techniques in millinery, jewelry, wigs and armour.

132 • Historic Textiles, Interiors and Furnishings (4)

A survey of the development of textiles, interiors and furnishings from the Egyptians to the present as related to the changing patterns of culture.

133 • History of Costume (4)

A survey of the development of costume from the Egyptians to the present as related to the changing patterns of culture.

140 • Dramatic Interpretation of Literature (4)

Study of the principles in Dramatic Interpretation and practical experience in the Dramatic Interpretation of dramas, dramatic poetry and novels.

141 • Reader's Theatre (4)

Study of the different concepts of Reader's Theatre and practical experience in the preparation and performance of dramas, dramatic poetry and novels in the Reader's Theatre style.

***148 • The History and Development of the Motion Picture (3) Sesonske [C]**

Study of world cinema since 1890's. Development of film as an art form and as a cultural, economic and social force.

149 • Theatre Workshop (1-6) Staff

Projects in costume, scenery, lighting, acting, directing. May be repeated for credit.

151A • Advanced Acting: Tragic Style (3)

Prerequisites: Dramatic Art 12 and recommendation from Dramatic Art 15C, and consent of instructor. By audition for transfer students.

Scenes and exercises re-examining the conventions of serious plays from selected periods of dramatic art. Students must take 111A in conjunction with this course. (F)

151B • Advanced Acting: The Craft of Comedy (3)

Prerequisites: Dramatic Art 151A and consent of instructor.

Scenes and exercises in various modes of comic acting ranging from farce to high comedy. Dramatic Art 111B must be taken in conjunction with this course. (W)

151C • Advanced Acting: Modern Trends (3)

Prerequisites: Dramatic Art 151B and consent of instructor.

Study and performance of contemporary acting developments. Dramatic Art 111C must be taken with this course. (S)

153A • Stage Direction. (3)

Prerequisites: Dramatic Art 61.

Introduction to principles and practice of directing. Lectures and demonstration of basic theoretical principles.

153AD • Stage Directing. (5)

Prerequisites: Dramatic Art 15A, 22, 23, 61. Restricted to Dramatic Art Directing Emphasis majors, or consent of instructor.

Lectures and demonstrations of basic theoretical

principles. Tutorial instruction in textual study and formal analysis.

153B • Techniques of Directing. (3)

Prerequisites: Dramatic Art 153A or 153AD and consent of instructor.

Laboratory in directorial scene work.

153C • Techniques of Directing Laboratory. (3)

Prerequisites: Dramatic Art 153A or 153AD and Dramatic Art Acting and Directing Emphasis majors only. Consent of instructor.

153D • Projects in Directing (4)

Prerequisites: Dramatic Art 153B, C and consent of instructor.

Directing emphasis only. Full directorial responsibility for this direction of a one-act play. (S)

153E • Senior Projects. (1-6)

Prerequisites: Senior standing and consent of instructor.

Special projects for each area of emphasis. May be repeated for credit.

154 • Opera Directing. (4)

Prerequisites: Advanced directing students on the undergraduate and graduate level.

Examination of director's role in operatic and music theatre production.

155 • American Drama (4) [C]

History of the American Drama and Theatre from 1895 to the present. Equal treatment given to major plays and to important theatre companies of this century.

160A • Development of Dramatic Art (4)

[C]

A study of the drama as a manifestation of cultural development, in terms of dramatic structure, the evolving physical theatre and artistic styles, and critical theory from its origin in the Western World through the Greeks to the Roman Empire.

160B • Development of Dramatic Art. (4)

[C]

Theatre and drama from the Medieval cathedrals to the Jacobean playhouse, including popular drama, Commedia dell'Arte, Marlowe, Jonson, and other dramatists of the Elizabethan theatre, excluding Shakespeare.

160C • Development of Dramatic Art. (4)

[C]

A study of French drama of the seventeenth century and British drama of the Restoration and eighteenth century, focusing on the plays of Corneille, Moliere, Racine, Wycherley, Congreve, Sheridan and others, and dealing with related developments in theatre, culture and society.

160D • Development of Dramatic Art. (4)

[C]

A study of the evolving forms and styles of drama and theatre from 1700 to the rise of Realism and Expressionism, including plays by Shiller, Sheridan, Buechner, Scribe, Zola, Gogol, Turgenev, Hauptmann, Wedekind, and others.

160E • Development of Dramatic Art. (4)

[C]

A study of European Drama in the period from

Ibsen to World War I, focusing on the plays of Ibsen, Strindberg, Chekhov, Shaw and others, and dealing with related developments in theatre, culture and society.

160F • Development of Dramatic Art. (4)

[C]

A study of the evolving forms and styles of drama and theatre from World War I to the present, including plays by Shaw, Pirandello, Brecht, O'Neill, Miller, Sartre, Beckett, Ionesco, Pinter, and others.

162 • Shakespeare on Film and Stage (4)

[C]

An investigation of Shakespeare's plays through the media of performance; viewing of Shakespearean productions on film and videotape, in classroom rehearsal, and in stage performances as available; reading and critical analysis of selected Shakespearean plays.

163 • World Drama and Theatre (4) [C]

A study of representative plays from major periods in the development of dramatic art. Emphasis on the Western world, but some examples from Oriental theatre. Comparative analysis of historical and social contexts, physical theatre, and production techniques. Films, videotapes, and live performances will be studied whenever possible. **Not open to students who have taken Dramatic Art 60.**

163S • World Drama and Theatre. (3) Summer Session. [C]

A study of representative plays from major periods in the development of dramatic art. Emphasis on the Western world, but some examples from Oriental theatre. Comparative analysis of historical and social contexts, physical theatre, and production techniques. Films, video tapes, and live performances will be studied whenever possible. Not open to students who have taken D.A. 60

164 • Music Theatre. (4) [C]

Introduction and survey of masterpieces of music-theatre. Exploration of the relationship of musical and theatrical values.

190 • Production Administration (3)

Prerequisites: Consent of instructor, and department chairman's approval.

Workshop for advanced student functioning as assistants to directors, designers, and technical directors. Portfolio, promptbook or paper required. May be repeated up to nine hours of credit.

191 • Theatre Management (4)

Prerequisites: Consent of instructor.

Business organization and management for the educational, community, and professional theatre, including budgeting, publicity, public relations and box office principles.

192 • Projects in Music Theatre. (4)

Prerequisites: Consent of instructor.

Special projects for directors, designers, and technical students in practical musical theatre production. May be repeated for credit.

194 • Group Studies for Advanced Students (1-4) Staff

Prerequisites: Senior standing and consent of the department chairman.

Description: Intensive study, research and project preparation. May be repeated up to eight hours credit. Enrollment normally limited to 12 or fewer students.

***199 • Independent Studies In Dramatic Art** (1-5) Staff

199 Courses are limited to no more than five units in one quarter and no more than 15 units total.

Graduate courses

200 • Introduction to Graduate Study In Dramatic Art (4)

Prerequisite: Graduate standing.

Discussion and utilization of various research techniques. Bibliographical work accentuated.

210A • Tragic Drama (4)

Prerequisite: Graduate standing.

Tragic masterpieces from Greeks to the present.

210B • Comic Drama (4)

Prerequisite: Graduate standing.

Comic masterpieces from Greeks to the present.

210C • Drama of Mixed Genres (4)

Prerequisite: Graduate standing.

Masterpieces of intermingled forms from Greeks to the present.

210D • American Theatre and Drama to 1895 (4)

Prerequisite: Graduate standing.

From origins of both to the rise of realism and the Theatrical Syndicate.

210E • American Theatre and Drama from 1895 (4)

Prerequisite: Graduate standing.

From the Theatrical Syndicate and the new art and drama movement to the present day.

235A • Advanced Problems in Directing (4)

Prerequisite: Graduate standing.

Discussion of advanced problems in directing; practical application and projects.

235B • Advanced Problems in Design (2)

Prerequisite: Graduate standing.

Discussion of advanced problems in design; practical application and projects. May be repeated up to ten hours credit.

235C • Advanced Problems in Theatre Practice (1-4)

Prerequisite: Graduate standing

Discussion of problems in repertory; practical application of specialized individual projects. A student may take no more than six units on the M.A. and no more than eight units on the Ph.D.

255 • Seminar in Film (3)

Prerequisite: Dramatic Art 46 or Philosophy 136.

Elements of film and its critical vocabulary, studied through the examination of the work of a distinguished director. Typical topics would include: visual style, expressive movement in film,

*See N2 for 198/199 independent studies unit limitations.

character, acting, symbolism, describing a film, reality and fantasy, photography.

272A • Seminar in Theories of Acting and Directing (4)

Prerequisite: Graduate standing.

Examination of the major theoretical works of the past and present on acting and directing.

272B • Seminar in Dramatic Theory: Aristotle to Lessing (4)

Prerequisite: Graduate standing.

Detailed study of theories from *The Poetics* to the *Hamburg Dramaturgy*.

272C • Seminar in Modern Dramatic Theory (4)

Prerequisite: Graduate standing.

Major theories and concepts from Lessing to Langer.

272D • Seminar in History of Physical Theatre and Design (4)

Prerequisite: Graduate standing.

Description: Examination of the physical theatre and stage design from ancient Greece to the present.

272F • Seminar in Non-Western Drama and Theatre (4)

Prerequisite: Graduate standing.

Oriental and Indian styles in drama and theatre.

272G • Seminar in Dramatic Literature and Theatre History (4)

Prerequisite: Graduate standing.

Studies in Drama utilizing whenever possible visiting scholars and specialists in theatre and drama. Content variable. Will be offered irregularly.

294 • Studies in Drama (4)

Prerequisite: Graduate standing.

Studies in Drama utilizing whenever possible visiting scholars and specialists in theatre and drama. Content variable. Will be offered irregularly.

296. Teaching: Methods and Practice. (4)

Prerequisites: Current appointment as a departmental Teaching Assistant.

Introduction to the problems and techniques of teaching dramatic art, through teaching responsibilities in departmental courses and through consultation with supervising faculty members. Required of all Teaching Assistants. May be repeated for credit.

593AA—ZZ • Master's Project, Research and Creative (1-8)

Prerequisite: Consent of instructor.

May be taken for a maximum of eight units. S/U grade.

596AA—ZZ • Directed Reading and Research (2-8)

Prerequisite: Consent of instructor.

Individual tutorial. A written proposal for each tutorial must be approved by the department

chairman and filed with the Graduate Division. S/U grade may be given while in progress, but to be converted to letter grade on conclusion.

597AA—ZZ • Individual Study for Master's Comprehensive and Ph.D. Examinations (1-12)

Prerequisite: Consent of instructor.

No unit credit allowed toward advanced degree. S/U grade.

599AA—ZZ • Dissertation Research and Preparation (1-12)

Prerequisite: Consent of chairman of student's doctoral committee.

Normally limited to total of 36 units. S/U grade.

Related courses in Education

390 • Curriculum and Instructional Procedures and Materials Used in the Teaching of Dramatic Art (3)

Prerequisite: Consent of instructor.

A study of the basic principles of teaching dramatic art; includes an examination and analysis of the literature and materials of dramatic art education.

392 • Student Teaching: Dramatic Art (3-6)

Prerequisite: Consent of instructor.

May be repeated.

393 • Problems Seminar in the Dramatic Art Major. (1)

Prerequisite: Consent of instructor.

May be repeated for two units.

Eastern Languages

Professor

Chauncey S. Goodrich, Ph.D., *UC Berkeley*; *aspects of ancient Chinese civilization (1000 B.C. to A.D. 600) as seen in literary and historical sources. Kingship and related subjects. (Vice-Chairperson in charge of Eastern Languages, Department of Germanic and Slavic Languages and Literatures).*

⁴Robert Hetzron, Ph.D., *UC Los Angeles*; *general, Semitic, Ethiopian and Hungarian linguistics.*

Associate Professors

³Robert L. Backus, Ph.D., *UC Berkeley*; *Japanese language and literature.*

Kenneth H. Pai, M.F.A., *Iowa State University*; *Mandarin language and modern Chinese literature.*

Charles Wendell, Ph.D., *UC Los Angeles*; *classical Arabic and Persian languages and literatures, Islamic civilization; religion, history, society, intellectual history.*

Assistant Professor

⁴Kuo Ch'ing Tu, Ph.D., *Stanford University*; *modern Chinese language and Chinese poetry.*

Lecturers

Keiko E. Mochizuki, B.A., *Tokyo Women's Christian College*; *beginning and intermediate Japanese language and translations.*

Hallam C. Shorrock, Jr., M.Div., *Yale University, B.A., University of Washington*; *Japanese Culture. Visiting Lecturer.*

Concerns of the department

Four oriental languages are taught at UCSB under the aegis of the Department of Germanic and Slavic Languages: Chinese, Japanese, Arabic, and Hebrew. All are languages of great cultural and historical importance for a variety of reasons. Each of these languages may be used in satisfaction of the language requirements of one of the two interdisciplinary programs dealing with the Orient; thus either Chinese or Japanese may be pursued in connection with the Asian Studies major, while either Arabic or Hebrew may accompany the major in Middle Eastern Studies. Moreover, students in a variety of disciplines (e.g., Anthropology, Art History, History, Linguistics, Philosophy, Political Science or Religious Studies) may find their work greatly enhanced by the acquisition of a knowledge of one of these languages. In most cases one cannot hope to do advanced professional work in fields involving the Orient without a knowledge of the language concerned. Finally, these lan-

guages and literatures are, of course, worthy of study for their own sake, embodying as they do such a large and significant portion of the thought and experience of mankind.

These four languages correspond exactly to four of the University of California centers for Education Abroad (Hong Kong, Tokyo, Cairo, and Jerusalem). Prior study of the language concerned is either required or highly recommended in every case.

At present there is a major program only in Chinese. This program provides the opportunity to study both modern Mandarin and Classical Chinese, the dominant literary medium until the twentieth century. All the languages offered may, however, be pursued at both the lower and upper division level.

Classes in Eastern Languages are usually relatively small, and the student can expect to get a maximum of attention from the instructor.

Departmental advising and publications

The adviser for the Chinese major and for departmental matters in general is Professor Chauncey S. Goodrich. For advice concerning the study of specific languages, see Prof. Goodrich for Classical Chinese, Prof. Kenneth H. Pai for Mandarin, Prof. Robert L. Backus for Japanese, Prof. Charles Wendell for Arabic, and Prof. Robert Hetzron for Hebrew.

Bachelor of Arts — Chinese

Preparation for the major

Students may elect to emphasize either Mandarin or Classical Chinese. Those who wish to emphasize Mandarin must take at least three quarters of Classical Chinese; those who wish to emphasize Classical Chinese must take at least three quarters of Mandarin. Students who have completed a more advanced course in a sequential series (e.g., Chinese 1, 2, 3, 4, 5, 6) will not be permitted to take a course that is lower in the series.

Required: Chinese 1, 2, 3, 4, 5, 6 (for those emphasizing Mandarin); Chinese 1, 2, 3, 101A—B—C (for those emphasizing Classical Chinese); two quarters of Chinese 8A—B—C, Chinese Conversation; History 86, China's Cultural Tradition. Art History 6D, Survey-Asian Art, is recommended.

Upper Division major

Required: Forty upper division units dealing with China, of which at least twenty-four must be in language courses. Eight of the 40 units must be chosen from History 184A—B—C, China's Major Dynasties, 185A—B, Modern China, 186A—B—C, History of China, 189Q, The City in East Asian Perspective, and 190A, China's Social and Institu-

³Absent on Leave Spring 1981

⁴Absent on Leave 1980-81

tional History, and 190B, Problems in Chinese History, 190C, History of Chinese Thought, the balance being selected from Chinese 110A—B, Survey of Classical Chinese Literature, 111, The Traditional Chinese Short Story, 112, Survey of Modern Chinese Literature, and Linguistics 120A—B, Historical-Comparative Linguistics (Sino-Tibetan family). *Recommended electives* are Anthropology 145, Far Eastern Societies; Art History 182A, Early Chinese Art, and 182B, Later Chinese Art; Philosophy 123A—B, Classical Chinese Philosophy; Political Science 131, China in World Affairs, 136, Government and Politics of China; Religious Studies 164A, The Buddhist Tradition: India, and 164B, The Buddhist Tradition: China, 166A, Religion in Chinese Culture, 166B, Taoist Traditions of China, 166C, Confucian Traditions of China: The Classical Period, 166D, Confucian Traditions of China: "Neo-Confucianism", 166E, The Flowering of Chinese Buddhism, 166F, Religious Literature in Chinese: Buddhist, 166G, Religious Literature in Chinese: Confucian, 166H, Religious Literature in Chinese: Taoist, 168, Man in Nature: East Asian Views, 169, Zen.

Near East Arabic

Lower Division courses

1 • Elementary Arabic (4) Wendell
Offered Fall quarter only.

2 • Elementary Arabic (4) Wendell
Prerequisite: Arabic 1 or equivalent.
(Continuation of Arabic 1.)

3 • Elementary Arabic (4) Wendell
Prerequisite: Arabic 2 or equivalent.
(Continuation of 2.)

4 • Intermediate Arabic (4) Wendell [D]
Prerequisite: Arabic 3 or equivalent.
(Continuation of 3.)

5 • Intermediate Arabic (4) Wendell [D]
Prerequisite: Arabic 4 or equivalent.
(Continuation of 4.)

6 • Intermediate Arabic (4) Wendell [D]
Prerequisite: Arabic 5 or equivalent.
(Continuation of 5.)

Upper Division courses

110 • Arabic Literature in Translation (4)
Wendell [D]

***198 • Readings in Arabic** (1-2) Wendell

199 • Independent Studies in Arabic (1-5)
Wendell
199 courses are limited to five units in one quarter and 12 units total.

Hebrew Lower Division courses

1 • Elementary Hebrew (4) Hetzron
Offered Fall quarter only.

2 • Elementary Hebrew (4) Hetzron
Prerequisite: Hebrew 1 or equivalent.
(Continuation of 1.)

3 • Elementary Hebrew (4) Hetzron
Prerequisite: Hebrew 2 or equivalent.
(Continuation of 2.)

Upper Division courses

110 • Hebrew Literature in Translation (4)
Hetzron [D] Not offered 1980-81.

115A—B—C • Readings in Israeli Hebrew (4-4-4) Hetzron [D]
Prerequisite: Hebrew 3 or equivalent.

Intermediate and advanced readings in Israeli Hebrew; grammar review and conversational exercises.

120A—B—C • Introductory Biblical Hebrew (2-2-2) Hetzron
Prerequisite: Hebrew 3 or equivalent.

Grammatical features of Biblical Hebrew, elementary reading in the Hebrew Bible. Not offered 1980-81.

***199 • Independent Studies in Hebrew** (1-5)
Hetzron
Prerequisite: Upper Division standing.

199 courses are limited to five units in one quarter and 12 units total. Not offered 1980-81.

Career opportunities

Study of the oriental languages can be of career assistance in a number of ways. Graduates in recent years have gone into diplomacy, museum work, and advanced study in preparation for university teaching. Relations with Asian nations also afford opportunities for the use of language in such areas as commerce, transportation, and journalism.

Teaching credentials

Students who complete a major in Chinese may be eligible to pursue a California teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180 Phelps Hall.

Correspondence information

Department of Germanic and Slavic Languages, Phelps Hall, Rm. 6206, University of California, Santa Barbara, California 93106. Phone: (805) 961-2131.

Semitic languages Upper Division courses

120A—B—C • Historical Semitic Linguistics (3-3-3) Hetzron. [D]

An introduction to the history of the Semitic languages, reconstruction of Proto-Semitic step-by-step regressively by confronting all the Semitic languages. Not offered 1980-81.

190 • Individual Studies in Hebrew (3-5)
Hetzron [D]
Prerequisite: Hebrew 115C or equivalent. Not offered 1980-81.

This course is meant to allow students who have completed the Hebrew courses regularly offered, or the equivalent, to go on with further, more advanced study, according to their needs and interest. Limited to 5 units in one quarter and 12 units total.

199 • Independent Studies in Semitic (1-5)
Hetzron

Prerequisite: Upper Division standing.
Independent investigations in literary fields.

199 courses are limited to five units in one quarter and 12 units total. Not offered 1980-81.

Graduate courses

596 • Directed Reading and Research (2-4)
Hetzron

Prerequisite: Advanced Graduate standing.

Individual tutorial. A written proposal for each tutorial must be approved by department chairman and filed with Graduate Division. Letter grade, minimum of two units per quarter. Not offered 1980-81.

Far East Chinese

Lower Division courses

1 • Elementary Modern Chinese (4) Pai
Prerequisite: None.

Offered Fall quarter only.

2 • Elementary Modern Chinese (4) Pai
Continuation of 1.

3 • Elementary Modern Chinese (4) Pai
Continuation of 2.

4 • Intermediate Modern Chinese (4) Tu
[D]
Continuation of 3.

5 • Intermediate Modern Chinese (4) Tu
[D]
Continuation of 4.

6 • Intermediate Modern Chinese (4) Tu
[D]
Continuation of 5.

7 • Chinese Conversation (2) Staff
Prerequisite: Chinese 3 or equivalent.
Introduction to Chinese conversation. (Offered summer only)

8A—B—C • Chinese Conversation (2-2-2)
Pai
Prerequisite: Chinese 3 or equivalent.

Upper Division courses

101A—B—C • Elementary Classical Chinese (4-4-4) Goodrich [D]

Prerequisite: Chinese 3 or consent of instructor

The readings will mainly consist in material from ancient prose works such as the *Chan-kuo ts'ue* and *Han-fei tzu*. Students will be expected to acquire a grasp of the fundamentals of Classical Chinese grammar and also some knowledge of ancient Chinese history and literature.

110A—B • Survey of Classical Chinese Literature (4-4) Goodrich [D]
Traditional literature from the *Shih ching* to the Yuan Dynasty. Readings, lectures and discussion in English.

112 • Survey of Modern Chinese Literature (3) Pai, Tu [D]
The literature of modern China from the *Hung-lou-meng* to the present, emphasizing the literature of the May Fourth Movement. Readings, lectures and discussions in English.

120A—B • Readings in Modern Social and Political Writings (4-4) Pai, Tu [D]
Prerequisite: Chinese 6 or equivalent.
Selected readings in the Chinese language on social and political writings.

122A—B—C • Advanced Modern Chinese (4-4-4) Pai, Tu [D]
Prerequisite: Chinese 6 or equivalent.
Advanced practice in grammar and composition.

124A—B • Readings in Modern Chinese Literature (4-4) Pai, Tu [D]

Prerequisite: Chinese 6 or equivalent.

Readings in the Chinese language in fiction, drama, and poetry written after 1919.

130A—B—C • Intermediate Classical Chinese (4-4-4) Goodrich [D]
Prerequisite: Chinese 101C.

Readings to be mainly in ancient prose, emphasizing the historical and philosophical literature, with grammatical and philological exegesis as needed.

131 • Selections from Classical Prose (3) Goodrich [D]
Prerequisite: Chinese 130A-B-C or equivalent.
The reading of important works of classical prose representing various periods and genres (history, philosophy, the essay)

132 • Selections from Classical Poetry (4) Pai, Tu [D]
Prerequisite: Chinese 130A-B-C or permission of the instructor.

Selections pursuing the theme of love and death in Chinese poetry from the *Shih Ching* to modern times.

140 • Topics in Chinese Culture (4) Goodrich [D]
Various aspects of Chinese traditional culture, emphasizing religion, ritual and the Emperor.

***198 • Readings in Chinese** (1-4) Staff
Prerequisite: Upper division standing.
May be repeated up to 12 units.

***199 • Independent Studies in Chinese** (1-5) Staff
Prerequisite: Upper Division standing.
199 courses are limited to five units in one quarter and 12 units total.

Graduate courses

201 • Readings in Selected Texts (2-4) Staff
Prerequisites: Ability to read Chinese at graduate level. Permission of instructor. Normally graduate status required.

Course will center on readings of Chinese texts, type and period to depend on needs of students and wishes of instructor. Research methods to be taught as appropriate.

596 • Directed Reading and Research (2-4) Staff
Prerequisite: Advanced graduate standing.
Individual tutorial. A written proposal for each tutorial must be approved by department chairman and filed with Graduate Division. Letter grade. Minimum of two units per quarter.

Japanese

Lower Division courses

1 • Elementary Japanese (4) Mochizuki
Offered Fall quarter only.

2 • Elementary Japanese (4) Mochizuki.
Continuation of 1.

3 • Elementary Japanese (4) Mochizuki.
Continuation of 2.

4 • Intermediate Japanese (4) Mochizuki [D]
Continuation of 3.

5 • Intermediate Japanese (4) Mochizuki [D]
Continuation of 4.

6 • Intermediate Japanese (4) Mochizuki [D]
Continuation of 5.

8A—B—C • Japanese Conversation (2-2-2) Mochizuki
Prerequisite: Japanese 3 or equivalent.
The course is designed to increase facility and naturalness of delivery in simple dialogue.

32 • Introduction to Japan (4) Shorrock [D]

A topical survey of modern Japan covering material on the society and the culture. This course is intended to satisfy casual interest in Japan as well as to impart a basic knowledge relative to specialized upper-division courses on Japan given in various departments.

Upper Division courses

101 • The Structure of Classical Japanese (2) Backus
Prerequisite: Japanese 5 or equivalent.
An introduction to the classical language presented through selections from Heian period literature.

105A—B—C • Composition and Conversation (4-4-4) Backus [D]
Prerequisite: Japanese 6 or equivalent.

Controlled composition and conversation based on a text. This course will complement and run parallel with the 120 series. 120A—B—C will concentrate on reading (the passive aspect) and 105A—B—C will concentrate on production in written and oral form (the active aspect).

110A—B • Survey of Pre-Modern Japanese Literature (4-4) Backus [D]
A survey of Japanese literature from its beginning to 1867. Readings, lectures and discussions in English.

112 • Survey of Modern Japanese Literature (4) Backus [D]
A survey of Japanese literature after contact with the West, from 1868 to the present. Readings, lectures and discussions in English. Not offered in 1980-81.

120A—B—C • Readings in Modern Japanese (4-4-4) Backus [D]
Prerequisite: Japanese 6 or equivalent.

124 • Readings in Modern Japanese Literature (4) Backus [D]
Prerequisite: Japanese 6
Selections from modern fiction and poetry.

130 • Readings in Classical Japanese (4) Backus [D]
Prerequisite: Japanese 101 or permission of instructor.
Selections from Heian-period prose to give the student practice in handling a good variety of

classical grammatical forms. Not offered in 1980-81.

140 • Topics in Japanese Culture (4) Backus [D]

Exploration and definition through reading in English of behavior patterns that persist in modern Japan. Not offered in 1980-81.

***198 • Readings in Japanese** (1-5) Staff

Prerequisite: Upper division standing.

Guided reading in Japanese on a subject not covered in the regularly offered courses. May be repeated up to 12 units.

***199 • Independent Studies in Japanese** (1-4) Backus

Prerequisite: Upper Division standing.

199 courses are limited to five units in one quarter and 12 units total.

*See N2 for 198/199 independent studies unit limitations.

Graduate courses

596 • Directed Reading and Research (2-4) Backus

Prerequisite: Advanced graduate standing.

Individual tutorial. A written proposal for each tutorial must be approved by department chairman and filed with Graduate Division. Letter grade. Minimum of two units per quarter.

598 • Master's Thesis Research and Preparation (1-6) Staff

Prerequisite: Graduate standing.

For research underlying the thesis, writing the thesis. Instructor should be the chairperson of the student's thesis committee. S/U grading.

Eastern Languages

30 • An introduction to the Writing Systems of East Asia (2) Staff

An introductory survey designed for the merely curious no less than those who have begun the study of an East Asian language, to acquaint them with the history, structural principles, and aesthetics of Chinese script both as it developed in China and as it was adapted to represent some neighboring languages, especially Japanese. As one of the world's original writing systems, the Chinese script is also made the point of departure for comparison with other important scripts to illustrate the typology of writing in general.

Courses in Other Departments

Sanskrit: See Religious Studies 159A—L.

Persian: See Religious Studies 157A—B—C.

Languages of the Far East: See Linguistics 120A—B.

Foreign literatures in English translation

(Literature courses for which no knowledge of a foreign language is required.)

Arabic

110 • Arabic Literature in Translation (4) Wendell [D]

Hebrew

110 • Hebrew Literature in Translation (4) Hetzron [D]

Chinese

110A—B • Survey of Classical Chinese Literature (4-4) Goodrich [D]

Traditional literature from the *Shih ching* to the Yuan Dynasty. Readings, lectures and discussions in English.

112 • Survey of Modern Chinese Literature (3) Pai [D]

The literature of modern China from the *Hung-lou-meng* to the present, emphasizing the literature of the May Fourth Movement. Readings, lectures and discussions in English.

140 • Topics in Chinese Culture (4) Goodrich [D]

Various aspects of Chinese traditional culture, emphasizing religion, ritual and the Emperor. Not offered in 1980-81.

Japanese

110A—B • Survey of Pre-Modern Japanese Literature (4-4) Backus [D]

A survey of Japanese literature from its beginning to 1867. Readings, lectures, and discussions in English.

112 • Survey of Modern Japanese Literature (4) Backus [D]

A survey of Japanese literature after contact with the West, from 1868 to the present. Readings, lectures, and discussions in English. Not offered in 1980-81.

140 • Topics in Japanese Culture (4) Backus [D]

Exploration and definition through reading in English of behavior patterns that persist in modern Japan. Not offered in 1980-81.

Economics

Professors

- ³Alec P. Alexander, Ph.D., *UC Berkeley; economic development.*
 William S. Comanor, Ph.D., *Harvard University; applied microeconomics, industrial organization.*
 Robert L. Crouch, Ph.D., *Essex; economic theory, money.*
 M. Bruce Johnson, Ph.D., *Northwestern University; economic theory.*
 Clement G. Krouse, Ph.D., *UC Los Angeles; Finance, Economic Theory.*
 Walter J. Mead, Ph.D., *University of Oregon; industrial organization, natural resources.*
 Lloyd J. Mercer, Ph.D., *University of Washington; economic history, microeconomic theory.*
 W. Douglas Morgan, Ph.D., *UC Berkeley; Public Finance, Macroeconomic Theory.*
 Llad Phillips, Ph.D., *Harvard University; labor economics, econometrics, economics of criminal justice. (Chairperson)*
⁴John E. Pippenger, Ph.D., *UC Los Angeles; international finance, money.*
 Jati K. Sengupta, Ph.D., *Iowa State University; operations research, mathematical economics.*
 Perry Shapiro, Ph.D., *UC Berkeley; urban and regional economics, economic theory.*
 Harold L. Votey, Jr., Ph.D., *UC Berkeley; economic development, international trade, economics of criminal justice.*

Associate Professors

- George Borjas, Ph.D., *Columbia; human resources.*
 Thomas F. Cooley, Ph.D., *University of Pennsylvania; econometrics.*
⁶Robert Deacon, Ph.D., *University of Washington; resource economics, economic theory.*
 Stephen J. DeCanio, Ph.D., *Massachusetts Institute of Technology; economic history, econometrics*
 H. E. Frech, III, Ph.D., *UC Los Angeles; industrial organization, economic theory, health economics.*
⁵Stephen LeRoy, Ph.D., *University of Pennsylvania; money, macroeconomics.*
 John Marshall, Ph.D., *Massachusetts Institute of Technology; urban and regional economics, economic theory.*

Assistant Professors

- Neil A. Raymon, Ph.D., *University of Colorado; macroeconomics, mathematical statistics.*
 John Sonstelie, Ph.D., *Northwestern; state and local public finance.*
¹Susan E. Woodward, Ph.D., *UC Los Angeles; economic theory, financial markets.*

Professors Emeriti

- Mortimer Andron, Ph.D., *University of Illinois.*
 J. Fred. Halterman, Ph.D., *UC Berkeley.*
 William F. Kennedy, Ph.D., *University of Wisconsin.*

Concerns of the department

The undergraduate programs in economics, business economics, and economics/mathematics are designed to serve several objectives. Completed in combination with other courses in the College of Letters and Science, the majors provide the opportunity for general cultural and intellectual development. The majors are particularly useful in supplying basic training for students planning careers in business or government and offer valuable preparation for various professions including law, journalism, and accounting. The economics and economics/mathematics majors provide the opportunity to build a solid foundation for graduate study in either economics or administration. The business economics major provides the same opportunity with respect to graduate work in administration.

Department advising and publications

The Department's Undergraduate Academic Advisor, assisted by the Peer Counselors, is available for counseling in North Hall 3051, 961-2981, from 9-12, and 1-3. Any questions about courses, requirements, substitutions and petitions should be channeled there. The Department also has advisors in several specific areas: business schools, Economics/Mathematics major, accounting, CPA and the Education Abroad Program. The Undergraduate Academic Advisor can direct students to these advisors.

Graduate students in need of counseling should contact the Assistant for Graduate Affairs, North Hall, 3051, 961-2982, 9-12 and 1-4 PM.

The general *Economics Handbook* is published for majors and prospective majors, and answers questions most frequently asked by economics majors. Brochures regarding the M.A. and Ph.D. program in Economics and the M.A. options in Urban Economics and Business Economics are also available.

Bachelor of Arts—Economics

Preparation for the major

The following lower division courses are required: Math 1 or completion of 2 years of high school algebra, Economics 1 and Economics 2, Math 3AB, or appropriate portions of 3S, or 7AB, *OR* English 42 and Economics 5 or upper division equivalent. Economics 5 **must** be completed be-

¹Sabbatical leave Fall 1980

²Sabbatical leave Fall and Winter 1980-81

³Sabbatical leave Winter and Spring 1981

⁴Sabbatical leave Spring 1981

⁵Sabbatical leave Winter 1981

⁶Sabbatical leave 1980-81.

fore upper division work. Upper division students transferring to the economics major from another major or another institution may take Economics 109 rather than Economics 1 and 2. Economics 109 may be taken concurrently with Economics 110, 104A, 101 or 105.

Only 2 units of credit will be allowed for Economics 109 if credit has already been given for Economics 1 or 2 or the equivalent.

Upper Division major

Thirty-six upper division units in economics are necessary for the major. Three specific courses, Economics 100A or 104A, 100B or 104B, and 101 or 105, are required. The student may choose 24 units of other upper division economics courses with the restriction that Economics 109 does not count toward the upper division requirements. Credit will *not* be allowed for both 100A and 104A, or both 100B and 104B, or both 101 and 105.

Bachelor of Arts—Business Economics

Preparation for the major

Courses required as preparation for the major are the same as those for the Economics major. In addition, Economics 3A and 3B or Economics 7A and 7B are required. Credit will not be given for *both* Economics 3AB and Economics 7AB.

Upper Division major

The requirements for the business economics major are the same as those for the economics major with the exception that at least four of the upper division electives must be selected from the following courses: Economics 102A, 116, 117A—B, 118A—B—C, 124, 131, 132A—B, 133, 134, 136A—B—C, 137, 138A—B—C, 139A—B, 172, 173 A—B, 175, and 186.

Bachelor of Arts—Economics/Mathematics

Preparation for the major

The following courses are required: Economics 1 and 2, Mathematics 3A—B—C, or 7A—B—C, or appropriate portions of 3S; 3D or appropriate portions of 3S; Mathematics 5A or 119A, and Mathematics 8 or 8S. Upper division students transferring from another institution may substitute Economics 109 for Economics 1 and 2.

Upper Division major

Forty upper division units in economics and mathematics, with a minimum of 16 units in each department, are required for the major. Economics 109, Mathematics 100A—B and Mathematics 133ABC **do not** count toward this upper division requirement. The following courses are required: Economics 104A—B, Economics 105, Mathematics 108A—B and either Economics 141A—B—C, or Probability and Statistics 120A—B—C. For breadth, fur-

ther elective courses are recommended in applied fields of economics and in mathematics courses concerned with optimization. Students should consult closely with their advisor in the Economics or Mathematics Department concerning their upper division program.

Combination Social Sciences major

Students interested in obtaining a major in the combined social sciences, see listing under “Social Sciences.”

Career opportunities

The undergraduate program in Economics provides an excellent academic foundation for careers in both the public and private sectors. Courses in economics are recommended for students interested in law and journalism as well as business.

For **graduate training in Economics**, the Department recommends that students either elect the Economics/Mathematics major or take Economics 104A—B, and 105 (economic theory with a mathematical and pure theory emphasis) with electives chosen from the following courses: 102A, 102B, 102C, 141A—B—C, and 143.

Career in Public or Business Administration. It is recommended that students interested in preparation for a career in administration include the following economics courses in their programs: 3A-B or 7A-B, 104AB, 105, 116, 133, 134, 140, 141A-B-C, 143, 170, and 175. The following courses are also highly recommended for those students considering MBA programs: Mathematics 12A, Mathematics of Finance, Economics 118A-B-C, Legal Analysis for Business.

Teaching credentials

Students who complete a major in Economics may be eligible to pursue a California teaching credential. Specific details of State of California and University of California requirements for the USCB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180 Phelps Hall.

Certain majors may require students contemplating a teaching career to complete specified courses within the major. These course requirements should be satisfied within the bachelor's degree program and prior to formal admission to the credential program.

Master of Arts—Economics

1. Admission Requirements

An undergraduate major in Economics is not required for admission to the graduate program, but the Department does require that specific courses—particularly economic theory—be passed with distinction. At least one quarter of calculus is also required. With the consent of the department, students with an inadequate undergraduate background in economics or mathematics can be admitted, but they will be required to remedy any deficiencies by taking appropriate undergraduate courses. Graduate Record Examination scores are strongly recommended for the M.A. program, particularly for all foreign students, and are re-

quired for all M.A. students with a GPA less than 3.25. TOEFL scores (English language aptitude test) are required of *all* foreign applicants.

2. Degree Requirements

Plan IIA— 36 units of course work. At least 24 units must be in graduate (200 level) courses.

Economics 205A—B—C, Economics 204A, and Economics 140 are required. Economics 141A—B—C can be substituted for 140. With the approval of the graduate advisor a maximum of 8 units may be included from graduate or upper division courses in another department.

A comprehensive oral examination in economic theory and *two* elective fields is also required.

Plan IIB— 36 units of course work consisting of all the courses typically taken in the first year of the Ph.D. program. An elective field other than quantitative methods may be substituted for Economics 240 and 141ABC; in this case Economics 140 is required.

A comprehensive oral examination in micro- and macroeconomic theory and quantitative methods, or the elective field substituted for quantitative method, is required.

Plan IIA is designed for students who enter with an M.A. degree specifically in mind. Plan IIB is designed to allow students in the Ph.D. program to acquire an M.A. degree after they have taken an appropriate number of primarily Ph.D. courses and an oral examination.

There is no language requirement for the M.A. degree. A well-prepared student can obtain the M.A. degree in one year.

Option in Business Economics

The Business Economics option is a full-time course of study leading to the M.A. degree in Economics. It is designed to prepare students for management and management specialist roles in business institutions of various kinds, as well as in government and government-related enterprises. Similar to a well-structured MBA program, there are several positive distinctions: In early course work the principles of economic theory are systematically and rigorously developed, but the focus shifts rapidly to applied analysis and *real business problems*. The fields of **Industrial Organization, Economic and Business Forecasting, and Finance** are singled out for detailed and intense treatment, with special attention given to the significant role played by legal and regulatory restraints. There are extended requirements in quantitative analytical skills, particularly in statistical methods and in public/managerial accounting. For example, the required course work in accounting forms the ground work for the CPA qualifying examinations; the emphasis on expository and research papers is intended to prepare the students to succeed in the business environment where written communication skills are essential.

The four elements of the MA Business Economics option at UCSB are 1) the *CORE* (7 courses, all of which are substitutable for equivalent courses)—development of analytical skills demanded by business; preparation for advanced course work; 2) the *FIELDS* (7 courses). The three required fields of Industrial Organization, Economic and Business Forecasting, and Finance are the pillars upon

which rest all functions of modern business and management. These courses provide specialized knowledge of unusual depth *and suggest ways to employ that knowledge* ; and 3) the *PRACTICUM* (1 course and seminar) provides additional focus upon what has been learned in the CORE and the advanced FIELDS, through application of this knowledge to significant, current, and real business problems, and through interaction with visiting professionals and management specialists; 4) the **electives** (minimum of 3 courses) offer the student an opportunity to pursue and develop subjects of personal interest, either by *designing* a fourth field of specialization, or by *choosing* a broadening, general array of courses. Typical areas include accounting, public finance, international trade, operations research, management science, labor economics, natural resource economics, urban studies, organization theory, computer information systems, and arts management.

Seventy-two units are required. Of these 72 units, a minimum of 36 must be completed at UCSB. Therefore, at most, the 36 remaining units may be substituted by evidence of satisfactory prior completion.

A 3.0 gpa (B) and satisfactory completion of the **Practicum** research papers are required for graduation. A typical two-year sequence of study might appear as follows:

	FALL	WINTER	SPRING
FIRST YEAR	Microeconomics I* Computer File Management* Intermediate Accounting I*	Microeconomics II* Probability/Statistics* Intermediate Accounting II*	Macroeconomics* Economic & Business Forecasting I* American Business History*
SECOND YEAR	Finance I Industrial Organization I Economic & Business Forecasting II	Finance II Industrial Organization II ELECTIVE	Finance III ELECTIVE ELECTIVE
◆-----Practicum-----◆			

Prerequisites to admission for the Business Economics option are

- 1) One semester (2 quarters) of college-level calculus;
- 2) An introductory course in accounting principles; and
- 3) Good knowledge of a programming language (e.g., BASIC, FORTRAN, or PL/1).

With the consent of the Department, students with a deficient background can be admitted, but they will be required to remedy any deficiencies by taking appropriate undergraduate classes.

GRE scores are strongly recommended, and are required of all students with a GPA of less than 3.25. TOEFL scores are required of all foreign applicants.

Despite the focus upon economic analysis, the Master of Arts in Business Economics option has a considerable degree of built-in flexibility. In addition to the opportunities afforded by the **Electives**, it allows students well prepared by their undergraduate training in **Economics, Business, and/or Mathematics** to complete all requirements in one year by satisfying by examination or evidence of satisfac-

tory prior completion of all or a major portion of the CORE requirements.

The CORE provides a full complement of instruction to students with *no prior training in business or economics*, making this program an attractive option to those persons seeking an option that will contribute to their advancement in business or management, and to those persons considering types of career changes requiring specialized academic preparation.

The student who wishes to emerge from this option with both the M.A. and sufficient preparation to sit for the AICPA Uniform Examination can accomplish both objectives concurrently.

Option in Urban Economics with Internship

The Urban Economics option in the Master's Degree Program offers a unique approach to the urban challenge. The program is problem oriented and highly flexible depending on the educational background of the student. The working philosophy of the program is to view the urban problem as one of resource allocation.

The first group of courses, which is the core of the program, is in economic decision-making.

URBAN ECONOMICS PROGRAM SEQUENCE

	FALL	WINTER	SPRING	FALL	WINTER
ECONOMIC THEORY	Theory of the firm and Markets	Linear Programming Input-Output	Elective	or	Decision Theory Elective
POLICY ANALYSIS AND IMPLEMENTATION	Public Administration or Urban Politics	Public Expenditure and Revenue	Urban Economics		Seminar on Internship Experience
TOOLS	Statistics	Econometrics	Accounting		Elective
EMPHASIS			Elective	Internship	Elective
LABORATORY (Computer Use)	Statistics	Econometrics	Accounting		Preparation of Master's Essay

The second area of emphasis deals with the analysis and implementation of public policy. Courses in both economics and political science are included in this set. These courses are designed to acquaint the student with the realities under which decisions are formulated.

The third class of courses deals with tools, such as statistics and accounting, that will be useful to the student in future employment. Additionally the student will be required to participate in a laboratory designed to provide the opportunity to practice newly acquired skills and to learn the techniques of modern computerized data manipulation and computation.

Depending on the student's preparation, courses are available that will accommodate the individual student's area of interest in the urban sector. These will be elective

and will relate to such areas as urban and regional economics, environmental economics, economics of human resources relating to education, public health, criminal justice, labor problems, public finance, public administration, urban politics and appropriate courses in sociology, biology, physics and various areas of specialization in engineering relating to the provision of urban services and the control of the urban environment.

A six-month internship in a local government provides on-the-job experience after the first three quarters of academic work.

The final requirement for the degree is a Master's Project: a report on research initiated by the student and dealing with a problem relevant to the internship and an oral examination. This consists of a report and oral examination on research initiated by the student and dealing with a problem relevant to the internship.

Doctor of Philosophy—Economics Requirements

1. Admission Requirements

An undergraduate major in Economics is not required for admission to the graduate program, but the Department does require that specific courses—particularly economic theory—be passed with distinction. At least one year of calculus is also required; prospective students, however, are advised to take as much mathematics as possible, particularly calculus and matrix algebra. With the consent of the Department, students with an inadequate undergraduate background in economics can be admitted, but they will be required to remedy any deficiencies by taking appropriate undergraduate courses. Graduate Record Examination scores in quantitative and verbal aptitude are required for admission to the Ph.D. program. TOEFL scores (English language aptitude test) are required of *all* foreign student applicants.

2. Degree Requirements

For the Ph.D. degree, a course in Capital Theory and Uncertainty, plus four fields are required; two of the fields are specified: 1) economic theory and 2) quantitative economics. Two additional fields will be selected from a list of electives. With the Department's approval, one elective may be chosen from an outside discipline.

After one year of course work a well prepared student should be ready to take the written General Examinations in economic theory and quantitative economics.

Within a year of passing the written preliminary examinations the candidate is expected to submit a written dissertation proposal and defend it orally.

There is no language requirement for the Ph.D. Degree. A well-prepared student can obtain the Ph.D. degree in three to four years.

Candidate in Philosophy (C.Phil.) Requirements

On advancement to candidacy for the Ph.D. degree (i.e., after having completed the General Examinations, but be-

fore completing the dissertation), a student may petition for the award of the C.Phil. degree. This is specifically designated as a non-terminal degree. Eligibility for the C.Phil. degree is limited to a period of seven years follow-

ing advancement to candidacy for the Ph.D. degree.

A well-prepared student can obtain a C.Phil. degree in two years.

Economics

Lower Division Courses

1 • Principles of Economics-Micro (4) Crouch, Johnson [E1]

An introduction to microeconomic analysis. Economic theory related to demand, production, competitive and non-competitive product markets, input markets, and welfare. Applications of microeconomic theory including its use in evaluating and forming public policy. Economics 2 may be taken before Economics 1. (F,W,S)

2 • Principles of Economics-Macro (4) Morgan [E1]

An introduction to macroeconomic analysis. Analysis of income, employment, and price level. Applications of macro economic theory including its use in evaluating and forming public policy. (F,W,S)

3A-B • Accounting Principles and Practices (4-4) Bartyn, Dowd

Introduction to accounting principles and practices. The elements of an accounting system and the recording of basic data. Applications in financial control accounting. Financial statement preparation and analysis. This course is prerequisite to all upper division accounting courses. (F,W,S)

5 • Statistics with Economic and Business Applications (4) DeCanio [E1]

Prerequisites: Economics 1 and 2.

An introduction to the analysis of economic data, elementary statistical methods and use of the computer. Topics will include basic probability theory, statistical inference and hypothesis testing, and regression. Two lectures and a two-hour seminar weekly. (F,W,S)

6 • Application of Mathematics in Economics (4) Staff [E1]

Prerequisite: Economics 1 and 2.

An introductory survey of the application of mathematics in economics. Topics in economic theory are analyzed with the use of mathematical techniques from the calculus. Students who have taken Math 3A or Math 34A or the equivalent can not receive credit for Economics 6.

7A-B • Introduction to Management Accounting (4-4) Gudnason

A financial statement analysis and review approach to accounting principles, including Economics 3A—B subject matter, with less emphasis on bookkeeping transactions. Brief introduction to purposes and subject matter covered in Auditing; a good introduction to Managerial Accounting. **Credit not given for both 3A-B and 7A-B.** (F,W,S)

10FS • Freshman Seminar (3) Staff

A general introduction to economics taught in seminar fashion by members of the department. Not to be offered in 79-80.

Upper Division courses

100A • Microeconomic Theory and Policy (4) Sonstelie, Shapiro, Morgan, Alexander [E1]

Prerequisites: Economics 1 and 2 or 109 and Econ 5.

Economic theory relating to demand, production and competitive product markets with emphasis on applications of theory. **Credit not given for both 100A and 104A.** (F,W,S)

100B • Microeconomic Theory and Policy (4) Johnson [E1]

Prerequisite: Economics 100A.

Economic theory relating to non-competitive product markets, input markets, and welfare with emphasis on applications of theory. **Credit not given for both 100B and 104B.** (F,W,S)

101 • Static Macroeconomics and Policy (4) LeRoy, Morgan, Raymon [E1]

Prerequisites: Economics 1 and 2 or Economics 109, and Economics 5.

Contemporary analysis of income, employment, and price level and public policy using a static general equilibrium framework with emphasis on applications of theory. **Credit not given for both 101 and 105.** (F,W,S)

102A • Advanced Topics in Microeconomics (4) Sengupta [E1]

Prerequisite: Economics 100B or 104B.

Elements of linear programming, input-output analysis and game theory.

102B • Dynamic Macroeconomics (4) Staff [E1]

Prerequisite: Economics 101 or 105.

Analysis of dynamic macroeconomic systems, including economic fluctuations, growth and stabilization.

102C • Advanced Macroeconomics (4) Staff [E1]

Prerequisite: Economics 101 or 105.

Selected topics in short run and long run dynamic economic theory and policy.

103 • History of Economic Thought (4) Leroy, Machan [E1]

Prerequisites: Economics 1 and 2 or 109.

The history of economic thought in relation to its social setting from ancient Greece and Rome to Marxism and Marginalism in the nineteenth century.

104A • Microeconomic Theory (4) Cooley, Chen [E1]

Prerequisites: Economics 1 and 2 or 109, plus Economics 6 or Mathematics 34A and 34B.

Economic theory relating to demand, production, and competitive product markets, using techniques from the calculus. **Credit not given for both 104A and 100A.**

104B • Microeconomic Theory (4) Sengupta, Sonstelie [E1]

Prerequisite: Economics 104A.

Economic theory relating to non-competitive product markets, input markets, and welfare, using techniques from the calculus. **Credit not given for both 104B and 100B.**

105 • Static Macroeconomics (4) Marshall, Marks [E1]

Prerequisites: Economics 1 and 2 or 109, plus Economics 6 or Mathematics 34A and 34B.

Contemporary analysis of income, employment, and price level and public policy using a static general equilibrium framework with emphasis on pure theory and use of techniques from the calculus. **Credit not given for both 105 and 101.**

107 • Comparative Economic Systems (4) Frech [E1]

Prerequisite: Economics 100B or 104B.

Centrally planned socialism, market socialism, capitalism and anarchy will be compared. Information needs, prices as signals, the relation between property rights and decentralization and Marxian value theory will be examined.

109 • Introduction to Economics (4) Staff [E1]

Not open to those who have taken Economics 1 and Economics 2. Economics majors may enroll in Economics 109 **only** if they have Upper Division standing. Serves as a prerequisite for Upper Division economics courses.

Only 2 units of credit will be allowed for Economics 109 if credit has already been given for Economics 1 or 2 or the equivalent. Majors are advised to take Economics 1 and 2 for a more thorough background for the major.

Intensive study of economic principles. **(Does not count as Upper Division major elective.)** (F,W,S)

110 • Contemporary Economic Problems (4) Staff [E1]

Current social-economic problems will be analyzed, each by a qualified staff member. Topics may include the following: the economics of poverty, discrimination, war, monopoly, the stock market, gold, inflation-deflation, economic growth, and alternative economic systems.

111 • The Economic Foundations of Human Behavior (4) Crouch [E1]

Prerequisite: Economics 1 or 109 or permission of instructor.

A study of the system of forces which determine human behavior. Discussion of the economic, biological and psychological explanations of human behavior characteristics such as discrimination, hierarchy, competition, cooperation, aggression, acquisitiveness, etc. An interdisciplinary course drawing on source material from economics, as well as the fields of anthropology, biology, ethology and psychology.

112A • European Economic History to 1850 (4) Mercer [E1]

Prerequisites: Economics 1 and 2

Analysis of the economic development of Europe from the Middle Ages through the English Industrial Revolution.

112B • European Economic History since 1850 (4) Mercer [E1]

Prerequisites: Economics 1 and 2

Analysis of the economic development of Europe since the English Industrial Revolution.

113A • Economic History of the United States to 1900 (4) Mercer, DeCanio [E1]

Prerequisites: Economics 1 and 2 or 109.

A survey of U.S. economic development from colonial times to the end of the nineteenth century with emphasis on issues related to U.S. economic growth and public policy as it affected both growth and the distribution of income.

113B • Twentieth Century United States Economic History (4) Mercer [E1]

Prerequisites: Economics 1 and 2 or 109.

A survey of U.S. economic development in the twentieth century with emphasis on issues related to the growth, instability and distribution of income. The impact of public policy on economic growth, instability and income distribution will be an important theme of the course.

114 • Economic Development (4) Votey [E1]

Prerequisites: Economics 1 and 2 or 109.

Applications of economic theory to the problems of developing nations.

115 • Environmental Economics (4) Staff [E1]

Prerequisites: Economics 1 and 2.

Economic analysis of environmental decision-making. Determination of the optimum level of pollution. Examination of the concept of externalities, estimation of social versus private costs and benefits, common property resources, welfare theory and production theory applied to problems of pollution.

116 • Organization of Industry (4) Frech, Mead, Krouse, Comanor [E1]

Prerequisite: Economics 100B or 104B.

Analysis of competition, monopolistic competition, oligopoly and monopoly theories and practices.

117A • Law and Economics I (4) Stuart [E1]

Prerequisites: Economics 100B or 104B

Application of economics analysis to the law. Includes analysis of the common law, the Constitution and the Federal system, and legal processes. Allocation of property rights and external costs and benefits will be examined. *LAW AND ECONOMICS II* may be taken before or after or independently of Law and Economics I.

117B • Law and Economics II (4) Stuart [E1]

Prerequisites: Economics 100B or 104B

Application of economic analysis to the law. Includes public regulation of the market, regulation of business organizations and financial markets both by common law (torts and contracts), by statute law and/or regulatory law. *LAW AND ECONOMICS I* may be taken before or after or independently of Law and Economics II.

118A—B—C • Legal Analysis for Business (4-4-4) Barrymore [E1]

Prerequisites: 118A is prerequisite for 118B and 118B is prerequisite for 118C.

A: The essentials of analysis of the law of contracts and their economic significance. (F)

B: An examination of the process of legal analysis of business relationships including agency, partnerships, and corporations. Includes study of the nature, formation and extent of agency, partnerships and corporations and comparisons between these various forms of business units and entities. It is recommended that 118A be taken before 118B. (W)

C: Analysis of the law of personal property, including its nature, possession, ownership, bailments, real property, including analysis of titles, conveyancing, and secured transactions, landlord and tenant, wills and estates and bankruptcy. (S)

120 • Urban and Regional Economics (4) Marshall, Shapiro [E1]

Prerequisites: 100B or 104B.

Economic analysis applied to current urban and regional problems.

121 • Real Estate and Housing Markets: An Introduction (4) Shapiro (Econ); Smith (Geog)

Prerequisites: None

This course considers the structure of housing prices, the structure of the market, real estate finance, commercial and industrial real estate, supply and demand for housing and housing and the national economy and housing cycles. Students are encouraged to take Geography 121 as a follow-up course.

122 • Natural Resource Economics (4) Mead [E1]

Prerequisite: Economics 100B or 104B.

Microeconomic theory and capital theory applied to problems of conservation and management of natural resources. Analysis of public policy with special emphasis upon energy resources and the energy crisis. Additional topics may include examination of water, fishery, and outdoor recreation resource management.

123 • Urban and Regional Modeling (4) Staff [E1]

Prerequisite: Economics 120 or permission of instructor.

Contemporary macroeconomic theory is applied as a means of description and analysis for regional economics. Practical applications (modeling) of input-output techniques and multiplier analysis will be studied.

124 • Business Ethics and Social Responsibility (4) Bremer, Machan [E1]

Prerequisites: Economics 1 and 2 or 109.

Application of ethics to the decisions of economic life; the responsibilities of individuals and economic organizations.

125 • Water Resource Economics (4) Mercer, Morgan [E1]

Prerequisite: Economics 100B or 104B

Microeconomic and capital theory applied to the problems of management of water resources. An analysis of public policy issues in the management of water resources. (S)

126 • Introduction to Marxist Economics (4) Machan [E1]

Prerequisites: Economics 1 and 2

A survey of the development, methodology and problems of Marxist economics.

130 • Public Finance (4) Sonstelie [E1]

Prerequisites: Economics 100A and/or 104A and Economics 101 or 105.

Fiscal theory and policy. Incidence and effects of taxation, government expenditure programs and benefit cost analysis.

131 • Fund Accounting - Accounting For Governments and Non-Profit Institutions (4) Jones

Prerequisite: Economics 136C.

Principles of fund accounting as used by all levels of government and by universities and colleges, hospitals, public schools, and research institutions operating on grants and other public support, and by charitable institutions.

132A—B • Auditing (4-4) Loster

Prerequisite: 136C.

Standard responsibilities, and control of audit engagements; internal control and procedural testing; objectives, reporting, and audit procedures with respect to the balance sheet and operating accounts; concluding the audit engagement, preparation of the audit report, and review of the audit engagement.

133 • Investments (4) Woodward [E1]

Prerequisites: Economics 5 or equivalent and Economics 100B or 104B.

Sources and demand for investment capital, salient characteristics of governmental and corporate securities, operation of security markets, determination of investment policy, and procedures for analysis of securities.

134 • Financial Management (4) Woodward, Chen [E1]

Prerequisites: Economics 5 or equivalent and Economics 100B or 104B.

Analysis and management of the flow of funds through an enterprise. Sources and application of funds, types and sources of long term capital. Introduction to the supply of investment funds and the organization of capital markets.

135 • Monetary Economics (4) Pippenger [E1]

Prerequisite: Economics 101 or 105.

Survey of monetary theory, the banking system and the supply of money, monetary policy and current issues.

136A—B • Intermediate Accounting (4-4) Loster, Dowd, Owen

Prerequisites: Economics 3B or permission of Director, Accounting Program, OR a "B" average in Economics 7A-B, plus permission of Director, Accounting Program.

The development of a more comprehensive knowledge of accounting principles and practice. Some of the topics covered in this course are: the recognition, analysis, and evaluation of business transactions having accounting significance; the recording, valuation, and presentation of the various principal asset, liability, and invested capital accounts; further practice in the preparation of the balance sheet and the income statement; principles basic to and preparation of the statement of changes in financial position; financial statement analysis; and specialized accounting topics. (F, W, S)

136C • Intermediate Accounting, Current AICPA Pronouncements (4) Staff*Prerequisite: 136B.*

The course extends the work on accounting theory in 136B by focusing on an analysis of the original AICPA-FASB and SAS Pronouncements. Members of the accounting profession will be invited to moderate certain classes. (F, W, S)

137 • Cost Accounting (4) Bartyn*Prerequisite: Economics 3B or 7B.*

Cost accounting systems, job costing, process costing, standard cost systems and variance analysis. By-product and joint product costing. Direct labor, materials and factory overhead costs. Direct costing and contribution margin.

138A • Income Tax Accounting - Individuals (4) Griesmer*Prerequisites: Economics 3B or 7B*

Basic concepts of income taxation pertaining to individuals; income and deductions, areas of special tax procedures pertaining to gains and losses from sales and exchanges; installment sales; preparation of tax returns.

138B • Income Tax Accounting - Corporations and Partnerships (4) Staff*Prerequisites: Economics 3B or 7B*

Income taxation pertaining to businesses; depreciation and depletion methods; special tax procedures pertaining to corporations and partnerships.

138C • Income Tax Accounting - Advanced Subjects (4) Staff*Prerequisites: Economics 138A and 138B*

Income taxation pertaining to estates and trusts; tax shelters; family tax planning; tax planning for the corporate executive and closely-held corporations.

139A—B • Advanced Accounting (4-4) Hicken*Prerequisite: Economics 136C.*

Accounting for partnerships: formation and operation, dissolution and liquidation; special sales accounting procedures; installment sales, consignments, home and branch office; consolidations; and accounting for fiduciaries; receiverships and estates and trusts.

141A—B—C • Econometrics (4-4-4)

Cooley, Phillips, Borjas [E1]

Prerequisite: Mathematics 34A—B—C or equivalent.

The application of quantitative methods in economics. **141A** will cover probability and its use in decision theory, distributions and their application to the distribution of income and firms, inference and hypothesis testing and their application in econometric estimation and model construction (F).

141B will continue with estimation covering the general linear regression model, Bayesian procedures, and applications of non-parametric techniques (W).

141C will discuss specific problems which arise in the course of estimating economic models, such as, the use of dummy variables, heteroscedasticity, multicollinearity, autocorrelation and an introduction to simultaneous equation estimation (S).

141D • Applied Econometrics (4) Staff [E1]*Prerequisites: Economics 141C or Economics 140, plus approval of instructor.*

Computer implementation of advanced econometric techniques, including three-stage least squares, maximum likelihood estimation, non-linear estimation, and logit analysis.

143 • Mathematical Economics (4) Marshall, Sengupta [E1]*Prerequisites: Economics 104B and 105.*

Application of mathematics to selected topics in micro- and macro-economic theory.

147 • Introduction to Econometrics (4) Cooley [E1]*Prerequisites: Economics 1 and 2 and Economics 5 or equivalent.*

A practical course in the development of economic models, analysis of specific functional forms, and the application of forecasting and estimation techniques. Emphasis is placed on the student's use of the computer facility as an aid in applying these techniques for the study of social and economic problems.

150 • Labor Economics (4) Borjas [E1]*Prerequisite: Economics 100B or 104B.*

This course analyzes the determinants of labor supply and labor demand, the decision to invest in schooling, on-the-job training and other forms of human capital, and the impact of trade unions and racial and sexual discrimination in the labor market.

160 • Economics of Crime and Justice (4) Phillips, Votey [E1]

Examines social policy to minimize the losses to crime and the costs of crime control. Develops the economics of crime generation, law enforcement, prosecution, corrections and punishment.

171 • Senior Accounting Internship (1-4) Bartyn*Prerequisites: 136C; Senior standing with 3.0 or better GPA; interview with instructor.*

This course provides senior accounting students the opportunity to gain further knowledge in the areas of accounting, auditing, and income tax, and the opportunity to gain practical experience in the management of an accounting firm. Credit will be given on a P/NP basis at the rate of 1 unit of credit for each 25 hours of internship at an accounting firm during a period not shorter than five weeks nor longer than ten weeks. Each student will prepare a written summary of the internship assignment at the end of the first five weeks, and again at the end of the quarter. Maximum credit not to exceed 4 units.

172 • Computer-Based Accounting Systems (4) Bartyn, Howard*Prerequisites: Economics 136C, GPA 3.0.*

Electronic data processing in the context of accounting, as tested in the A.I.C.P.A.'s Uniform C.P.A. examinations, through a study of hardware, software, and sample applications.

173A • Managerial Accounting (4) Loster*Prerequisites: Economics 3B or 7B. Economics 137 is recommended, but not required.*

Cost allocation for planning and control, cost behavior patterns, cost volume-profit relationships, profit planning, budgeting, capital expenditures, differential cost analysis, profit performance measurements, intracompany transfer pricing

and product pricing methods.

173B • Managerial Accounting-Advanced (4) Loster*Prerequisite: Economics 173A.*

Through lectures, case studies, group studies and seminars, subject matter covered in Economics 173A shall be applied to actual business problems.

175 • Government and Business (4) Krouse [E1]*Prerequisite: Economics 100B.*

Analysis of alternative public policies for maintaining competitive performance in the economy.

180 • International Trade (4) Votey [E1]*Prerequisite: Economics 100B or 104B.*

Historical and contemporary trade mechanisms; international trade theory; trade and welfare.

181 • International Finance (4) Pippenger [E1]*Prerequisite: Economics 101 or 105.*

International money and capital markets and their impact on the domestic and world economies; international financial institutions and policies.

184 • Management and Organizational Behavior (4) Johnson [E1]*Prerequisite: Senior Standing*

This course acquaints students with the science of behavior as related to the organization and tasks of management leadership. Topics include principles of behavioral science, motivation theories, models of human behavior, leadership, conflict management, and change. Students' writing skills, through business reports and term papers, shall be emphasized.

192 • Field Research in Economics (4-12) Staff*Prerequisites: Upper Division status, 3.00 overall GPA, approval of project by faculty sponsor and Department Undergraduate Committee.*

Directed field research on a topic in economics. No more than four units of Economics 192 may be counted toward the requirements for the major in Economics, Business Economics, or Economics/Mathematics.

194 • Group Studies (1-4) Staff*Prerequisites: Upper Division standing and admission by special arrangement.*

Intensive study and research on a topic in economics selected by the student with the guidance and approval of a faculty member. Subject to Departmental approval, students may repeat this course, however, only four units may count toward the major.

196H • Senior Honors Seminar (4) Staff*Prerequisite: Senior standing with 3.0 or better average in the major.*

Advanced topics in economic theory and policy. Weekly seminar discussions led by various members of the economics faculty.

***199 • Independent Studies in Economics** (1-5) Staff

Admission by special arrangement. 199 courses are limited to no more than 5 units in one quarter and no more than 12 units total.

Graduate Courses

200A-B-C • Microeconomic Theory (4-4-4)

Comanor, Frech, Johnson, Phillips, Shapiro
Prerequisites: Requires a knowledge of differential calculus. Economics 240, Economics 100AB or 104AB, or equivalent courses.

A-B: Methodology, theory of consumer behavior and demand, modern utility theory, exchange and markets, theory of the firm, mathematical programming supply and demand of factors, externalities. C: General equilibrium and welfare economics.

200D • Capital Theory and Uncertainty (4)

Frech, Marshall, Woodward

Prerequisite: Economics 200C

Fisherian theory of the rate of interest, markets for contingent claims, the asset pricing model.

201 • General Equilibrium Theory and Welfare (4)

Krouse, Marshall, Shapiro

Advanced topics in general equilibrium and welfare economics.

202 • Advanced Topics in Economic Theory (1-4)

Deacon, Krouse, Mead, Phillips
 Reading and discussion of selected topics and recent literature in current economic theory. Specific material will vary from quarter to quarter. May be repeated for credit.

203A-B • History of Economic Thought (4-4) Staff

A: Analysis of the relationships between social conditions, economic theory, and economic policy from the medieval to the late 1800's.

B: Analysis of the relationships between social conditions, economic theory, and economic policy from the neo-classical period to the present. Methodological problems including relationships to the sociology of knowledge and general intellectual history.

204A-B • Macroeconomic Theory (4-4)

Crouch, LeRoy, Marshall, Morgan, Raymon

Prerequisites: Economics 101, 105 or equivalent courses.

A: Static macroeconomic theory. Classical, Keynesian and post-Keynesian theory of natural income and employment.

B: Disequilibrium macroeconomic theory. Survey of disequilibrium theory, with emphasis on modeling price dispersion and search, and on fixed price dispersion analysis. Additional topics may include investment theory, financial equilibrium and dynamic macroeconomics.

205A-B • Economic Decisions (4-4)

Comanor, Deacon, Shapiro

Prerequisites: Knowledge of differential calculus and economic theory. Economics 100AB, Economics 101 or equivalent courses.

The course will establish the ideas and techniques of optimally allocating scarce resources. The student will learn the nature of objective functions and constraints in theory and through examples describing rational economic behavior of individuals, firms and public bodies. Basic capital theory will be covered.

205C • Economic Decisions (4) Staff

Prerequisite: Graduate Standing Econ 205A-B and/or consent of instructor.

Linear and nonlinear programming and benefit cost analysis. Theory of intertemporal optimization and general equilibrium welfare analysis. Economic analysis of real public (or private) capital project will be required.

206 • Operations Research (4) Sengupta

Prerequisites: Econ 205A, Econ 205B or consent of the instructor.

Topics in applied methods of operations research selected from stochastic programming, statistical decision theory, inventory control and queuing.

208 • Topics in Macroeconomic Theory (4)

Crouch, Marshall, Morgan, Raymon

Classical, Keynesian and post-Keynesian theory of income and employment, and policy prescriptions thereof. Conventional theories of inflation. Introductory survey of disequilibrium theory, with emphasis on fixed price models, income constrained processes, the search theory of resource, unemployment, and rational expectations formation.

211A-B • The Economic Foundations Of Human Behavior (4-4) Crouch

Theoretical analysis of human capital accumulation, the allocation of time, household production, and the family as a decision making unit with respect to non-market behavior. Application of the preceding to such topics as fertility, marriage, criminality, health, education discrimination.

212 • Economic History Of Europe (4)

DeCanio, Mercer

Issues in European economic history.

213 • American Economic History (4)

DeCanio, Mercer

Issues in American economic history.

214A-B • Economic Development (4-4) Vo- tey, Staff

A study of the special problems faced by the less developed countries and the initial conditions and economic mechanisms that must be taken into account in raising living standards. Topics considered include population growth, labor supply, capital accumulation, the use of foreign resources, and effects of technological change.

216A-B • Organization of Industry (4-4)

Comanor, Frech, Johnson, Krouse, Mead

Advanced topics in industrial organization and public policy.

220A-B • Urban and Regional Economics (4-4) Deacon, Marshall, Shapiro, Sonstelie

A: The theory of city and regional economics. Economic theory when distance is taken as an important determinant of economic activity. **B:** Urban and Regional Policy. The application of theory to policy decisions.

230A-B • Public Finance (4-4) Deacon, Morgan, Sonstelie

A: Public goods, taxation and expenditure theory. **B:** Topics vary: public debt management and fiscal policy; advanced topics in public expenditure and taxation theory; analysis of collective choice, political processes, and group decision making

234A-B • Financial Management (4-4) Staff

A: Develops a general theory of capital asset prices, then examines the array of financial assets within this framework. With this basis the course covers the principles of portfolio construction and portfolio evaluation.

B: Managerial aspects of selection of assets to acquire methods by which they are financed and policies for disbursement or reinvestment of the earnings from these assets. Emphasis on market forces which produce prices that allow managers to make these decisions.

235A-B • Money and Banking (4-4) LeRoy, Pippenger

Prerequisites: Economics 204A

A: Monetary theory

B: Topics in monetary analysis—may include advanced study of monetary equilibrium, problems of monetary control, the efficient capital markets model and rational expectations.

241A-B-C • Econometrics (4-4-4) Cooley, Phillips, Raymon, Shapiro

Prerequisites: Math 34A—B—C or equivalent. 241A is prerequisite to B, and B is prerequisite to C.

A: Covers probability theory, including distribution theory and expectation, with applications to model construction and decision theory.

B: Covers fundamental classical and Bayesian methods in statistical inference, including point estimation, confidence intervals and hypothesis testing, with applications to problems in the social sciences.

C: Covers the general linear regression model, including discussion of the use of dummy variables, of problems which arise in the course of estimating economic models (specification error, multicollinearity, heteroscedasticity, autocorrelation, simultaneous equation bias), and of simultaneous equation estimation.

242 • Mathematics for Economists (4) Staff

Selected topics in mathematics of particular importance to economists including the calculus, difference and differential equations, linear algebra.

244A-B • Mathematical Economics (4-4) Sengupta

Mathematical analysis of economic theory.

245A • Econometrics (4-4) Cooley, Phillips, Sengupta

Development of the theory of single equation and simultaneous equations estimation.

245B • Econometrics (4) Sengupta

Econometric studies, spectral analysis, multivariate techniques.

246 • Business Forecasting (4) Cooley, Krouse

Prerequisites: Econ 140 or Econ 141C or 241C.

Various methods for econometric forecasting, including statistical decision theory. Box-Jenkins, adaptive models, single and simultaneous structural equation models, and input-output analysis. Applications of various techniques to forecasting needs of management, such as sales and inventory, will be discussed.

*See N2 for 198/199 independent studies unit limitations.

247 • Introduction to Econometrics (4) Staff

Prerequisites: Economics 1 and 2 and Economics 5 or equivalent.

Practical course in development of economic models, analysis of specific functional forms, application of forecasting and estimation techniques. Emphasis on use of computer facility as aid in applying these techniques for study of social and economic problems.

250A—B • Labor Economics (4-4) Borjas, Phillips

Theoretical and empirical analyses of the structure of wages, the labor market, distributive shares in national income, investment in human resources, national manpower and wage policy and other topics in industrial relations.

260A • Natural Resources (4) Deacon

Capital theory and welfare economics applied to natural resource industries; the role of renewable and nonrenewable resources in the process of economic growth; analysis of externalities and common property resources; public investment criteria.

260B • Natural Resources (4) Mead

Capital theory, welfare economics and benefit cost analysis at theoretical and applied levels, as they relate to energy resource management and public policy.

270 • The Management of Organizations (4)

Alexander

Management functions in the context of organization theory. Course studies formal organizations from the classical, systems and behavioral science points of view and such major management functions as planning, decision making, controlling and communicating

273A—B • Managerial Accounting (4-4)

Loster

Prerequisites: Economics 137 recommended but not required.

A: Cost allocation for planning and control, cost behavior patterns, cost volume-profit relationships, profit planning, budgeting, capital expenditures, differential cost analysis, profit performance measurements, intracompany transfer pricing and product pricing methods.

B: Through lectures, case studies, group studies and seminars, subject matter covered in Economics 173A shall be applied to actual business problems.

280A-B • International Trade (4-4) Marshall, Pippenger, Votey

Prerequisite: Econ 204A

A: International trade theory. **B:** International finance.

591 • Graduate Workshop in Economics

(4) Frech

Presentation of research completed and in progress by graduate students, with faculty attending. Students expected to offer critical and useful comments on research. Open to Ph.D. and M.A. students. Largely, but not limited to dissertation research.

592 • Teaching in Economics (4) Staff

Teaching Assistant: Leads discussion of topics covered in faculty lecture. Associate: Assumes full responsibility for the teaching of one or more courses.

593 • Research in Economics (5) Staff

Research under the direction of a faculty member.

594AA—594ZZ • Special Topics in Economics (1-4) Staff

Prerequisites: Graduate standing and consent of instructor.

Special seminar on research subjects of current interest.

595AA—595ZZ • Group Studies In Economics (4) Staff

Prerequisites: Graduate standing and consent of instructor.

Critical review of research in selected fields.

596AA—596ZZ • Directed Reading and Research (2-4) Staff

Prerequisites: Graduate standing and consent of instructor.

Individual tutorial.

597 • Individual Study for Master's Comprehensive Examination and Ph.D. Examinations (1-12) Staff

Prerequisites: Graduate standing and consent of instructor.

No unit credit allowed toward advanced degree.

598AA—598ZZ • Master's Thesis Research and Preparation (1-12) Staff

Prerequisites: Graduate standing and consent of instructor.

Only for research underlying the thesis, writing the thesis. No unit credit toward the degree will be given.

599AA—599ZZ • Dissertation and Preparation (1-12) Staff

Prerequisites: Graduate standing and consent of instructor.

Only for preparation of the dissertation.

EDUCATION

Professors

- ¹, ²Norman J. Boyan, Ed.D., *Harvard University; Educational Administration*
 George I. Brown, Ed.D., *Harvard University; Confluent Education*.
¹John W. Cotton, Ph.D., *Indiana University; Educational Psychology*.
 Naftaly S. Glasman, Ph.D., *UC Berkeley; Educational Administration*.
 Ray E. Hosford, Ph.D., *Stanford University; Counseling Psychology*.
 Lawrence J. Hubert, Ph.D., *Stanford University; Educational Psychology and Statistics*.
², ³Laurence Iannaccone, Ed.D., *Teachers College, Columbia; Educational Administration and Policy*.
 Melvyn I. Semmel, Ed.D., *Indiana University; Special Education*.
 Stewart B. Shapiro, Ph.D., *University of Southern California; Confluent Education*.
¹R. Murray Thomas, Ph.D., *Stanford University; Educational Psychology, International Education*.
³Jules M. Zimmer, Ed.D., *Arizona State University; Child Development and Early Childhood Education*.

Associate Professors

- Donald R. Atkinson, Ph.D., *University of Wisconsin; Counseling Psychology*.
 James H. Block, Ph.D., *University of Chicago; Educational Psychology*.
²Willis D. Copeland, Ph.D., *University of Notre Dame; Instruction and Social Studies Education*.
 Gustavo Gonzalez, Ph.D., *University of Texas; Language Development and Bilingual/Cross-Cultural Education*.
 James W. Pellegrino, Ph.D., *University of Colorado, Educational Psychology*.

Assistant Professors

- ¹, ², ³J. Manuel Casas, Ph.D., *Stanford University; Counseling Psychology*.
², ³Priscilla A. Drum, Ph.D., *Stanford University; Language Development and Reading*.
 Robert B. Everhart, Ph.D., *University of Oregon; Organizations and Social Inquiry*.
 Noah E. Friedkin, Ph.D., *University of Chicago; Organizations and Survey Methodology*.
 Susan R. Goldman, Ph.D., *University of Pittsburgh; Educational Psychology, Language Development and Reading*.
 Guadalupe San Miguel, Jr., Ph.D., *Stanford University; History of Education*.

Lecturer

- Richard Jamgochian, Ph.D., *University of Chicago; Social Foundations (Head of Teacher Education)*.

Professors Emeriti

- Loretta M. Byers-Sauers, Ed.D., *Stanford University*.
 Glen W. Durflinger, Ed.D., *University of Oregon*.
 Chester W. Harris, Ph.D., *University of Chicago*.
 Elizabeth H. Irish, Ed.D., *Stanford University*.
 Charles L. Jacobs, Ph.D., *Columbia University*.
 Edith M. Leonard, M.A., *Claremont Colleges*.
 Ralph K. Nair, Ed.D., *University of Missouri*.
 Elsie A. Pond, M.A., *Stanford University*.
 Lester B. Sands, Ed.D., *Stanford University*.
 Kermit A. Seefeld, Ed.D., *Stanford University*.
 Dorothy D. VanDeman, M.A., *Claremont Colleges*.
 John A. R. Wilson, Ed.D., *Oregon State University*.

Concerns of the School

*See Chapter J.

Departmental Advising and Publications

The programs of the Graduate School and Department of Education fall into three broad domains: the Ph.D. concentrations, the master's degree emphases, and the credentials (basic teaching, service, and specialist).

Advanced degree program advising. An Academic Adviser is authorized to sign various official documents for the Graduate Division in connection with all master's and Ph.D. programs. In addition, students will find "program advisers" in each of the concentrations and emphases who offer counsel on program requirements and associated details.

Credential advising—Teaching, Service, and Specialist. The central point of contact for all credential candidates is the Education Credential Adviser, located in the Office of Student Teaching, Graduate School of Education, who provides information on specific credential requirements. See **Credential programs** below for list of credential programs.

Joint credential and advanced degree advising. Candidates who pursue both a credential and an advanced degree will find it necessary to visit with both the Education Credential Adviser and the Academic Adviser.

A Pre-Credential Advising Committee for both elementary and secondary teaching meets weekly. See **Credential advising**, Section **D1**. All students interested in teaching credential programs and requirements are urged to attend the weekly meeting held for their benefit, or to make an appointment with the Education Credential Adviser for a more convenient time.

¹Absent on leave, Fall 1980

²Absent on leave, Winter 1981

³Absent on leave, Spring 1981

The *Graduate School of Education Announcement* is published annually and contains additional detailed information about admission and program requirements. Copies can be obtained without cost from either the Academic Adviser or the Education Credential Adviser.

Master of Arts and Master of Education

Characteristics of the Programs: The purpose of these degree programs is to add to the competence of experienced elementary-school or secondary-school teachers in academic disciplines as well as pedagogical or research skills. In addition, program emphases are available for persons who seek to specialize in educational careers which do not require previous teaching experience.

Within a general program candidates must select a specific area of emphasis or concentration. For concentrations in Confluent Education (integration of the affective and cognitive domains of learning), Counseling Psychology, or Special Education, both the M.A. in Education and the M.Ed. are available. Other concentrations within the M.A. program include Bilingual/Cross-Cultural Education, Educational Administration, Educational Psychology, Early Childhood Education, Instruction, International Education, and Reading. Each candidate and adviser or advisers construct a total program acceptable to both parties. Candidates are expected to take a final comprehensive examination or complete a thesis requirement at the conclusion of master's degree programs.

There is no blanket language requirement for all candidates. When the candidate's program adviser or advisers deem it suitable for a candidate's field of study, they shall require an appropriate degree of competency in one foreign language. No course credit will be given for the candidate's demonstration of such competency.

Prerequisites to the Programs: The candidate must hold a bachelor's degree or its equivalent from an institution of acceptable standing and must satisfy the requirements of the Graduate Division. Some programs require possession of a California teaching credential, or its equivalent, prior to entering the program, and in some instances, teaching or other appropriate experience. Consult the Academic Adviser to ascertain the specific requirements in the program of your choice.

Admission to the Programs: *Request application forms from the Graduate School of Education. These forms are provided in duplicate so that one set of all materials is returned to the Graduate School of Education and one set is sent directly to the Graduate Division.*

Admission to the various programs is open as indicated:

All Quarters	Fall Quarter Only
Bilingual Education	Confluent Education
Early Childhood Education	Counseling Psychology*
Educational Administration	Language Development
Educational Psychology	and Reading
Instruction	
International Education	
Special Education	

*Applicants accepted for fall quarter may begin studies in the preceding summer.

Applications will be considered up to the cutoff date established by the graduate division except for Counseling Psychology which has a cutoff date of March 1.

All applicants should be aware that the Graduate Division ordinarily sets May 1 as the cutoff date for accepting applications for Fall Quarter enrollment. This date is, however, subject to change. Inquiries should be directed to the Graduate Division.

Applicants who wish to be considered for fellowships must file completed applications prior to January 15.

Degree Requirements: Detailed information regarding these advanced degrees in education appears in the *Graduate School of Education Announcement* and in the *Graduate Division Announcement*.

Admission is subject to the availability of a program of study in the candidate's subject matter field or fields.

Doctor of Philosophy

Fields of Study: The areas in which candidates can be accepted at present include the following: Confluent Education (integration of the affective and cognitive domains of inquiry and learning), Counseling Psychology, Educational Administration, Educational Psychology, International Education, and Language Development, Reading, and Special Education. Doctoral work in Early Childhood Education may be pursued as part of the concentration in Educational Psychology or the concentration in Language Development and Reading.

Admission to the Programs *Request application forms from the Graduate School of Education. These forms are provided in duplicate so that one set of all materials is returned to the Graduate School of Education and one set is sent directly to the Graduate Division.*

Admission to the various programs is open as indicated:

All Quarters	Fall Quarter Only
Educational Psychology	Confluent Education
International Education	Counseling Psychology*
Special Education	Language Development
	and Reading

Fall and Winter Quarters

Educational Administration

*Applicants accepted for fall quarter may begin studies in the preceding summer.

Applications will be considered up to the cutoff date established by the graduate division except for Counseling Psychology which has a due date of March 1. and Confluent Education which has a due date of May 1.

All applicants should be aware that the Graduate Division ordinarily sets May 1 as the cutoff date for accepting applications for Fall Quarter enrollment. This date is, however, subject to change. Inquiries should be directed to the Graduate Division.

Applicants who wish to be considered for fellowships must file completed applications prior to January 15.

Prerequisites to the Programs: An applicant must fulfill the general requirements for admission to graduate status and must submit a report of performance on at least one of two tests (Miller Analogies or Graduate Record Examination Aptitude Test). In addition, the student is re-

quired to present a description of how the proposed doctoral study relates to the individual's background and to plans for the future.

Additional information may be requested from applicants by the individual program areas.

Only applicants whose records suggest clear potential for succeeding in doctoral studies will be accepted into the program.

Characteristics of the Program: The purpose of the program is to prepare highly capable scholar-researchers who will perform as scholars and skilled professionals in their chosen field.

No specific total number of course units which a student must accumulate prior to receiving the doctorate is prescribed.

Residence Requirement: The minimum residence requirement for the Ph.D. degree is two years. Students in doctoral programs will spend at least six quarters in residence pursuing a program of full-time study and research on the Santa Barbara campus; three consecutive quarters of this residence must be completed in regular session before advancement to candidacy. Exceptions to this rule may be granted only by the Graduate Council.

If a student needs skill in one or more foreign languages or in statistics and computer technology in order to pursue a special field of study most effectively, then such requirements will become part of the study program. However, there is no general foreign language or statistics requirement which every candidate must fulfill.

Degree Requirements: Detailed information regarding these advanced degrees in education is given in the *Graduate School of Education Announcement* and in the *Graduate Division Announcement*.

Credential programs/Certificate programs

Credentials for service in public schools in California are issued by the State upon recommendation of institutions authorized for training. The Graduate School of Education provides the professional education courses and directs the student teaching program for all credentials. There are certain acceptable standards which must be met by candidates for teaching credentials, including such qualifications as intelligence, scholarship, aptitude for teaching, physical fitness, and personality. All candidates must be in good standing in the Graduate Division on completion of any credential program.

The Graduate School of Education offers programs leading to recommendation for the following credentials:

- **Multiple Subject Teaching** Credential
- **Single Subject Teaching** Credential
- **Administrative Services** Credential
- **Services Credential** with a Specialization in Pupil Personnel Services authorizing service as a **School Counselor** or **School Psychologist**
- **Instructional Specialist** Credential in Bilingual/Cross-Cultural Education

- **Instructional Specialist** Credential in Early Childhood Education

- **Instructional Specialist** Credential in Learning Handicapped

- **Instructional Specialist** Credential in Reading.

Requirements and Prerequisites for Teaching Credentials: Under the requirements of California State credential law, all clear teaching credentials require a minimum of one year's graduate work beyond the bachelor's degree. An undergraduate student seeking a credential to enter the teaching profession from UCSB will enter the College of Letters and Science or the College of Creative Studies to work for a baccalaureate degree. For most credentials, an applicant must complete during the undergraduate years the General Education requirements in the humanities, social sciences, natural sciences, mathematics, and the fine arts and also a few prescribed prerequisites. UCSB offers a large number of undergraduate majors appropriate for teaching at the elementary and secondary school levels (see listing in *Graduate School of Education Announcement*). For details on requirements and prerequisites, the student should consult designated advisers in his major field in the College of Letters and Science or in the College of Creative Studies and also in the Graduate School of Education.

A sequence of professional courses is planned as an integrated, year-long sequence in the Graduate School of Education. This professional preparation in Education occurs during a post-baccalaureate year except for a small number of students admitted to the "Selected Seniors Program."

For more complete information concerning all credential programs see the *Graduate School of Education Announcement*. For information about the Clinical Rehabilitative Services Credential in Language, Speech, and Hearing and Educational Audiologist, consult the Department of Speech in the College of Letters and Science.

In addition to the credential programs offered above, master's degree students admitted in Counseling Psychology may, by petition, be admitted to specialized studies programs in College Student Personnel Counseling and Marriage, Family, and Child Counseling. Students who complete these two specialized studies programs receive a UCSB certificate of Completion of Graduate Curriculum. For more complete information concerning these two certificates see the *Graduate School of Education Announcement*.

Correspondence information

Academic Adviser, Department of Education,
Phelps Hall Rm. 2309A, University of California,
Santa Barbara, California 93106. Phone: (805)
961-2137.

Education Credential Adviser, Office of Student Teaching, Phelps Hall, Rm. 1175A, University of California, Santa Barbara, California 93106. Phone: (805) 961-2036.

Education

Upper Division courses

114 • Introductory Educational Statistics (4) Friedkin

Prerequisite: College algebra or consent of instructor.

Measures of central tendency and variability. Sets, sample spaces, and random variables. Introduction to estimation theory and hypothesis testing. Binomial, normal, t, and chi-square distributions. Bivariate normal distribution.

121 • Techniques of Field Observation in School Settings (2) Staff

Prerequisite: None.

Consideration of methods for observation and interpretation of teaching/learning behaviors in elementary and secondary classrooms. Emphasis will be placed on utilizing observational techniques to develop an integrated knowledge of classroom phenomenon.

122 • Practicum in Field Observation in School Settings (1) Staff

Prerequisites: Enrollment in or completion of Education 121.

This course provides undergraduate students an opportunity to experience the real world of teaching, to examine themselves in the role of a potential teacher, to develop firsthand knowledge of the school; environment, and to render service to the community.

164 • Educational and Vocational Guidance (3) Staff

Prerequisite: Consent of instructor.

Examination of vocational development theory, the sociology of work, and school programs focused upon individual decision making. Participation in relevant community surveys.

165 • Introduction to Counseling Psychology (3-4) Hosford

Prerequisites: Junior standing.

This course is designed for those considering or beginning counseling psychology as a career. The scientific and clinical aspects of the field along with the historical development and new directions in counseling psychology will be covered.

175 • Contemporary Special Education (4) Staff

Prerequisite: None.

A course in special education for undergraduate students and other non-majors covering the nature and needs of the handicapped pupil, special education programs and methods, contemporary social, legal, and educational issues.

199 • Independent Studies (1-5) Staff

Prerequisite: Open only to advanced students approved by the chairman of the department.

Study of special problems in various fields of education; 199 courses are limited to no more than five units in one quarter and no more than 15 units total.

*See N2 for 198/199 independent studies unit limitations.

Graduate courses

200 • Research Methods in Education (4) Cotton

Prerequisite: Graduate standing and consent of instructor.

Basic principles of scientific method exemplified by experimental, survey, longitudinal and correlational studies; design and reporting of original investigations; bibliographic experience.

201 • Seminar: Models, Processes, and Inquiry Modes in Research (4) Everhart

Prerequisite: Consent of instructor.

An introduction to disciplined scientific inquiry; appropriate for all students interested in original research. Examines philosophical basis of knowledge, structure of science, and application. Special focus on theory and theory testing, theory building.

202A • Processes Involved in Learning to Read (4) Drum

Prerequisite: Consent of instructor.

Survey of major findings in the physical, perceptual, linguistic, and cognitive processes involved in learning to read, including examination of theoretical models of reading acquisition.

202B • Processes Involved in Learning from Text (4) Drum

Prerequisite: Consent of instructor.

Survey of text linguistics, memorial and experiential processes involved in learning from text, and the development of text comprehension abilities.

203 • Social Foundations of Education (3) Everhart

This survey provides both an historical and comparative perspective on contemporary social and philosophical issues as they relate to the classroom and the school.

204 • Research and Measurement in Reading and Language (4) Drum

Focus on learning to critically review reading and language research studies and the instruments used in measuring performance.

205 • Comparative Education (4) Thomas

Analyses of the role of education in developing nations; a study of educational problems and attempted solutions in societies of Asia, Africa, Central and South America, and the Pacific Islands.

206 • Methodology in Reading and Language Research (4) Drum

Prerequisite: Consent of instructor.

The students will develop research instruments, materials, and designs for projected reading and language research studies. Emphasis will be on defining critical levels of independent variables in relation to specific criterion measures.

208 • History of Education in the United States (4) San Miguel

Prerequisite: Consent of instructor.

This course introduces the student to the historiography of modern education and explores the development of the public school system, the education of American ethnic groups, urban education and culture, and public school reform. A research paper is required.

209A • Theories of Child Development (4) Thomas

Prerequisite: Consent of instructor.

Analyses of characteristics of various theories of child development, their underlying assumptions, and research evidence that bears upon the theories' likely validity.

209B • Cognitive Development (4) Goldman

Prerequisite: Consent of instructor.

Development of intellectual processes is considered from the viewpoints of information processing theory and Piagetian theory. Topics include development or reasoning problem solving, and number concepts during infancy, pre-school and elementary school years. Language development that occurs during the elementary school years is also considered. The instructional implications of these changes in intellectual processes are discussed.

209C • Social Development (4) Zimmer

Development of social behaviors and understanding of children from 0 - 12. Topics concern self-understanding, emotions and socialization.

209D • Human Development and Education (4) Thomas

Prerequisite: Consent of instructor.

Concepts and theories of development as they apply to understanding the educability of children and adults. The assumptions about development that underlie various educational practices.

210A—B—C • Research and Theory in Cognition (4—4—4) Staff

Prerequisite: Consent of instructor.

Survey of major approaches to the study of human cognition. Includes theories and data on learning, memory, and information processing, including the structure and processing of language.

211 • Psychological Foundations of Education in Elementary School (3) Thomas

Prerequisite: Graduate standing and consent of the instructor.

Interdisciplinary approaches to theory and research on student behavior.

212 • Psychological Foundations of Education (3) Block

A study of the nature and dynamics of human behavior. Emphasis is placed upon the application of psychological principles to the educative process, personality development and assessment.

213 • Diagnosing Learning Difficulties (4)

Factors which may cause learning difficulties are analyzed, methods of evaluating these factors in the classroom and clinic are described, and solutions for the difficulties are proposed. Not offered 1979-80.

214A • Advanced Educational Statistics (4) Hubert

Prerequisite: College algebra or consent of instructor.

Measures of central tendency and variability. Sets, spaces, and random variables. Introduction to estimation theory and hypothesis testing. Binomial, normal, t, and chi-square distributions. Bivariate normal distribution.

214B • Advanced Educational Statistics (4)
Hubert

Prerequisite: Education 214A.

This course will deal with the following topics: Review of interval estimation and hypothesis testing; one-way fixed analysis of variance; two-way fixed effects analysis of variance; principles of fixed-effect design; bivariate distributions, simple correlation, and simple regression; and binomial distributions.

214C • Advanced Educational Statistics (4)
Hubert

Prerequisite: Education 214B.

This course will deal with the following topics: random and mixed anova designs, parametric procedures, analysis of covariance (in relation to randomized block designs), and multiple regression and correlation.

215 • Curriculum Theory and Dynamics (4)
McAda

Prerequisite: Admission to Master of Arts in Education Program or Administrative Services Credential Program.

Curriculum theory and research are applied to the analysis of classroom teaching. Particular emphasis is placed on recent studies of the structure of subject matter, advances in educational media, and research and clinical reports on interpersonal functioning in the classroom.

216A—B—C • Multivariate Statistics in Education (4-4-4) Hubert

Prerequisite: Education 214A—B—C.

Advanced statistics devoted to multivariate distribution theory and analysis; multivariate analysis of variance, discriminant analysis, canonical correlation. A review of the necessary matrix algebra will be included.

217A • Beginning Gestalt Theory and Practice (5) Brown

Prerequisite: Graduate standing and consent of instructor.

The theory and principles of Gestalt Therapy as applied to an educational context. Experiential participation in a training experience.

217B • Advanced Gestalt Theory and Practice (4) Brown

Prerequisite: Education 217A and consent of instructor.

Advanced training in Gestalt. Emphasis is on current theoretical, methodological, and clinical developments in the field as they apply to education and other human resource areas. Experiential participation in an advanced training experience.

217C • Institutional Leadership: A Gestalt Perspective (4) Brown

Prerequisites: Consent of instructor. Ed. 217A to be taken simultaneously.

The application of the principles of Gestalt Therapy as both a learning and interpersonal process to leadership behavior in institutions and organizations.

219A • The Evaluation of Student Learning I (4) Block

Prerequisite: Graduate standing and consent of instructor.

An introduction to the theory of student evaluation and the construction of summative, norm-referenced achievement tests.

219B • The Evaluation of Student Learning II (4) Block

Prerequisite: Education 219A and consent of instructor.

An excursion into contemporary test theory. Topics: formative placement and diagnostic evaluation, criterion-referenced testing; the problem of setting performance standards; the development of integrated student evaluation systems.

219C • The Evaluation of Student Learning III (4) Block

Prerequisites: 219A or consent of instructor.

A continued excursion into contemporary test theory topic: Testing in the affective domain.

221A—B • Fieldwork Methods in Education (4-4) Everhart

Prerequisite: Education 201 or consent of the instructor.

An introduction to procedures of qualitative research techniques as applied to educational processes and settings. Topics include field relations, data collection and analysis, ethics and data application. The second term is devoted to fieldwork projects.

222A • Introduction to Exceptional Children (4) Staff

Prerequisite: None.

An overview of the historical, social, and legislative foundations of the education of the exceptional pupil. Survey of the range and nature of disabilities requiring special education.

222B • Characteristics and Education of Children with Learning Handicaps (4) Staff

Prerequisites: 222A or equivalent.

Study of the developmental, cognitive, and affective characteristics of LH pupils and of the special education theory and principles of educational modification for learning handicapped pupils.

222C • Characteristics and Education of Children with Learning Handicaps (4) Staff

Prerequisites: 222A or equivalent.

Study of the developmental, cognitive, and affective characteristics of LH pupils and of the special education theory and principles of educational modification for learning handicapped pupils.

222D • Proseminar: Policy Research Issues in Special Education (4) Semmel, M.

Prerequisites: 222A,B,C or consent of program leader.

Contemporary policy research issues related to referral, assessment, identification, and placement of handicapped children in the schools. Includes review of literature, analysis, construction, and evaluation of variables contributing to least restrictive environments for the handicapped; IEP and instructional paradigms, due process, parent involvement, and personnel development.

222E • Proseminar: Policy Research Issues in Special Education (4) Semmel, M.

Prerequisites: 222A,B,C or consent of program leader.

Contemporary policy research issues related to referral, assessment, identification, and placement of handicapped children in the schools. Includes review of literature, analysis, construction, and evaluation of variables contributing to

least restrictive environments for the handicapped; IEP and instructional paradigms, due process, parent involvement, and personnel development.

222F • Proseminar: Policy Research Issues in Special Education (4) Semmel, M.

Prerequisites: 222A,B,C or consent of program leader.

Contemporary policy research issues related to referral, assessment, identification, and placement of handicapped children in the schools. Includes review of literature, analysis, construction, and evaluation of variables contributing to least restrictive environments for the handicapped; IEP and instructional paradigms, due process, parent involvement, and personnel development.

222G • Seminar: Advanced Topics in Special Education (4) Staff

Prerequisites: Advanced standing in the M.A. program, the M.Ed. program, or consent of program leader.

Consideration of alternative instructional environments for handicapped pupils, new instructional roles for teachers, and leadership and consultation skills.

222H • Research Seminar: Policy Research in Special Education (4) Semmel, M.

Prerequisites: Open to doctoral students in Special Education and related areas of specialization.

222H,I,J advanced research seminars designed as corequisites for 222D,E,F. Students are required to propose and conduct research studies on policy issues related to the education of handicapped children in the schools.

222I • Research Seminar: Policy Research in Special Education (4) Semmel, M.

Prerequisites: Open to doctoral students in Special Education and related areas of specialization.

222H,I,J advanced research seminars designed as corequisites for 222D,E,F. Students are required to propose and conduct research studies on policy issues related to the education of handicapped children in the schools.

222J • Research Seminar: Policy Research in Special Education (4) Semmel, M.

Prerequisites: Open to doctoral students in Special Education and related areas of specialization.

222H,I,J advanced research seminars designed as corequisites for 222D,E,F. Students are required to propose and conduct research studies on policy issues related to the education of handicapped children in the schools.

223A • Assessment and Individualized Education Programs for Handicapped Pupils (4) Staff

Prerequisite: 222A.

Corequisite: Practicum in Special Education 229A. Field work will be correlated with course content.

A course in methods of individual educational assessment and instructional planning for handicapped pupils.

223B • Instructional Methods and Classroom Management for Handicapped Pupils (4) Staff

Prerequisite: 222A.

Corequisite: Practicum in Special Education 229A. Field work will be correlated with course content.

Implementation of individual educational programs, instructional management, selection modification of curriculum, techniques of behavior management.

223C • Early Education of the Handicapped Child (4) Staff

Prerequisite: 222A.

Identification, planning, and delivery of special educational interventions for the pre-school handicapped child. Includes review of relevant literature and service models.

223D • Special Education for the Severely and Profoundly Handicapped (4) Staff

Prerequisite: 222A.

Identification, planning, and delivery of special education interventions for the severely and profoundly handicapped child. Includes consideration of institutionalization/community based service models, and review of relevant literature.

223E • Pscho-Educational Assessment and Evaluation of Handicapped Children (4) Staff

Prerequisite: Consent of instructor.

Methods of psycho-educational assessment and evaluation for identification, planning, placement, and review of progress of handicapped children in the public schools. Includes consideration of screening and diagnostic instruments and procedures as well as instruments and materials to assure nondiscriminatory assessment.

223F • Special Education for the Bilingual Handicapped Child (4) Staff

Prerequisites: 222B,C or consent of instructor.

Issues in identification and provision of educational services to bilingual handicapped children. Includes consideration of linguistic and cultural differences affecting learning styles of non-English and limited English speaking handicapped children, as well as socio-political legal influences of service delivery systems.

223G • Social Psychology of the Handicapped (4) Staff

Prerequisite: Consent of instructor.

Includes reviews of relevant research on development of social competence in handicapped children, and perceptions, somatopsychology, expectations, and interactions with adults and peers.

223H • Administrative and Legal Issues in Special Education (4) Staff

Prerequisites: 222B,C or equivalent and consent of instructor.

Legal requirements and responsibilities of special education administrators. Includes consideration of resource allocations, provision of procedural safeguards to parents, and initiation of innovations in organizing and administering special education programs in the schools.

223I • Secondary Education of Learning Handicapped Pupils (4) Staff

Prerequisites: 222B,C and consent of instructor.

Topics include adolescent development of the handicapped, educational alternatives, methods, secondary school curriculum, career counseling, and vocational preparation of handicapped youth.

225 • Social Foundations of Education in Elementary Schools (1-1-1) Jamgochian

Prerequisite: Graduate standing and consent of instructor.

Interdisciplinary approaches to theory and research on the school as a social institution.

This is an in-progress graded course over 3 quarters for a total of 3 units.

226A—B—C • Early Childhood Learning Laboratory (4-4-4) Zimmer

Prerequisites: Admission to Early Childhood Program or consent of instructor.

Course focuses on developmental concepts concerning children from birth to 11 years of age. Developmental theory studied in the laboratory is applied to activities with parents and children. Generalizations are made to home and school.

227 • Research Methods in Child Development (4) Thomas

Prerequisite: Graduate standing and consent of instructor.

Survey and critique of methods of studying children. Includes the completion of a short research project by each class member.

228A—B—C • Early Childhood Learning Fieldwork (4-4-4) Staff

Prerequisite: Admission to Early Childhood Program or consent of instructor.

Field experience in the development of organizational and management procedures to facilitate growth and learning. Develop criteria for working with volunteers, tutors, parents and para-professional staff members.

229A • Practicum in Special Education (2-12) Staff

Prerequisite: None.

Individually designed pratica and field experiences may be repeated each quarter for up to 12 units of credit. Students enrolled in 223A (Assessment and IEP for Handicapped Children) and 223B (Instructional Methods and Classroom Management) must enroll concurrently in 229A.

229B • Internship in Special Education (2-12) Staff

Prerequisites: Advanced standing in the doctoral program and consent of program leader.

Field placement in private, local, state or federal education agency to acquire experience in research and policy formulation on issues related to delivery of educational services to handicapped pupils.

230 • Developmental and Remedial Reading (3) Dixon

Prerequisite: Consent of instructor.

A course for the classroom teacher and the specialized reading teacher, emphasizing practical, innovative techniques in the reading program. Offered Summer Session only

231A—B—C—D • Developmental and Remedial Reading Laboratory (1-4) Dixon

Prerequisite: Admission to the M.A. in Reading or consent of instructor.

A practical laboratory experience. Students will learn to implement instructional programs with remedial and developmental reading students.

232A • Reading Diagnosis (4) Dixon

Prerequisite: Consent of instructor.

First course in reading diagnosis. Course emphasizes the selection and implementation of diagnostic practices and prescription in both developmental and remedial reading programs.

232B • Advanced Reading Diagnosis (4) Dixon

Prerequisite: 232A.

Second course in reading diagnosis and prescription intended for the person organizing and implementing developmental and remedial programs in the schools.

233 • The Roles of a Reading Specialist (1-4) Dixon

Prerequisite: Consent of instructor.

Seminar discussions examine (among others) roles of reading specialists as curriculum designer, program evaluator, change agent, and proposal writer. Major project involves evaluation of a schoolwide reading program.

This is an in-progress graded course over two quarters for a total of 3 units.

234 • Linguistics for Teachers (4) Drum, Goldman

Linguistic theory and its applications to the teaching of language and reading skills. The course will survey topics in phonetics, syntax, semantics, and pragmatics.

235 • Contemporary Critics & Reform Movements (4) Everhart

Prerequisite: Consent of instructor.

Seminar focuses on basic dimensions of reform and their applicability to education. The evolution of reform in education and its current status are addressed. Particular emphasis is given to "new left" proposals for reform.

236 • "Youth" & Youth Policy in American Education (4) Everhart

Prerequisite: Consent of instructor.

Seminar addresses the changing conceptions of youth and the effect of these views on educational policy. The seminar is interdisciplinary in focus, and relates historical, sociological, and psychological literature to the institutional arrangements within which youth grow up.

237A • Collective Bargaining in Education (2) Staff

Prerequisite: Consent of instructor.

Introductory study of legal and substantive issues, cases, problems in negotiations, dispute settlement techniques, and private and public sector comparison.

238 • Children's Literature (4) Dixon

Prerequisite: Consent of instructor.

Topics include the development of tastes and interests, values and attitudes; standards for the creating of children's literature; bibliotherapy—the problems approach; individualized reading—balancing the diet; interrelationships with total curriculum; experimenting with children's literature. Offered in Summer Session only.

239 • School Law (2) Staff

Prerequisite: Consent of instructor.

The history of school law including significant cases will be reviewed along with a study of the Education, Administrative, Welfare and Institution, and other relevant Codes. Opinions of the Courts, Attorney General and County Counsel will also be studied.

240A • The Administrator and Educational Purpose (4) Boyan, Glasman*Prerequisite: Consent of instructor.*

A systematic consideration of relations between educational purposing and processes of educational decision making. Special emphasis is placed on value-judgmental and factual bases of decision making in education.

241A • Politics of Education (4) Iannaccone
Prerequisite: Consent of instructor.

Educational governance and politics are explored as well as legal and extra legal controls exerted upon schools as public institutions.

241B • Politics of Education (4) Iannaccone
Prerequisite: Education 241A and consent of instructor

A systematic examination of governance and politics of education in local, state, national, and international contexts. Emphasis is placed on various processes and mechanisms of politicization of educational governance.

242A • Complex Organizations (4) Everhart, Friedkin*Prerequisite: None.*

General theories of complex formal organizations are explored along with their implications for analysis of educational organizations.

242B • Advanced Topics on Complex Organizations (4) Friedkin, Everhart*Prerequisite: None.*

This seminar will involve an intensive literature review and discussion of an active research topic in the field of complex/formal organizations. The particular topic may vary from year to year. Students are advised to consult with the instructor before registering.

243 • The School Administrator (4) Jamgochian*Prerequisite: Graduate standing and consent of instructor.*

The role of the school administrator is examined in theoretical and practical contexts.

244 • Organizations and Interpersonal Relations (4) Shapiro*Prerequisite: Consent of instructor.*

Application of knowledge of interpersonal relations to organizations, not limited to schools. Covers "human side" of management—conflict resolution, communication, motivation, stress, and effects of change—on morale, authority, leadership, and productivity. Emphasizes diagnostic methods, tests, and interviews.

245A • Educational Finance (4) Glasman*Prerequisite: Consent of instructor.*

An introduction to the financing of education at the school, district, county, state, and federal levels. Emphasis will be given to the economic foundations of school financing.

245B • Political Economy of Organizations (4) Friedkin*Prerequisite: None.*

From an organizational perspective, this course considers patterns, causes, and consequences of resource allocations in organizations. The political economy of educational organizations receives particular emphasis.

246A • Evaluation as an Administrative Function (4) Glasman*Prerequisite: Consent of instructor.*

Educational evaluation is examined as an executive function. Emphasis is on practices, models and studies of program and personnel evaluation and the integration of educational evaluation within the context of educational decision making.

246B • Evaluation as an Administrative Function (4) Glasman*Prerequisite: Education 246A and consent of instructor.*

Theories and practices of program and personnel evaluation are explored including the use of research methodology in evaluation and the construction of evaluation instruments. Emphasis is placed on program characteristics and personnel behavior and characteristics and on their possible correlations with student achievement. Evaluation results are viewed as inputs for administrative decision making.

247A • Seminar in Administration, Perspectives on Educational Policy and Development (4) Staff*Prerequisite: Consent of instructor.*

Current specific problems relating to the administration of school programs are selected for analysis through the application of theory and research in organizational behavior.

248B • Survey Research Methods (4) Friedkin*Prerequisite: Consent of instructor.*

Seminar provides an introduction to concepts and methods fundamental to survey research. The logic of survey research will be emphasized, rather than those statistical procedures which may be used in survey research.

248C • Survey Research Practicum (4) Friedkin*Prerequisite: Consent of instructor.*

Seminar provides practical experience with survey research methods. Students will engage in computer assisted analyses of survey research data.

249 • Practicum—Educational Administration (1-6) Glasman*Prerequisite: Consent of instructor.*

Field experience, discussions with school administrators and simulated activities will be utilized to maximize understanding of the "work world" of school administrators. May be repeated up to a total of 9 units.

250 • Doctoral Seminar in Confluent Education (4) Staff*Prerequisite: Consent of instructor and enrollment in the Ph.D. program in Confluent Education.*

Critique and integration of major concepts and research in the field of confluent education preparatory to Ph.D. dissertation. Discussion of effective strategies for needed research, assistance in defining areas and problems for dissertation research.

251 • Introduction to Self-Science Education (4) Phillips*Prerequisite: Consent of instructor.*

Experiential learning opportunities and the presentation of theoretical models are combined to help students acquire the tools, skills, and methodologies of the self-scientist. Specific emphasis is placed on classroom applications.

252 • Classroom Interaction (4) McAda*Prerequisite: Consent of instructor.*

Study of current research and theory related to verbal and non-verbal teacher-student interactions in classroom settings. Use of observation instruments to measure the impact of teacher behavior on student behavior. Guided practice using selected interaction techniques: asking questions, changing wait-time and reward schedules, and other techniques related to success with new curriculum materials.

253 • Design of Instruction (4) Copeland*Prerequisite: Consent of instructor.*

An examination of (a) analytical models for the study of instruction, (b) major research findings on school learning, (c) representative instructional strategies and tactics and (d) skills for designing instructional systems.

254 • Supervision of Instruction (4) Copeland*Prerequisite: Consent of instructor.*

An investigation of (a) the development of and major points of view concerning supervision, (b) the variables impinging upon the work of the supervisor including both structural/organizational and human/interpersonal, (c) strategies and skills for effective practice of instructional supervision.

255A—B • Sociology in Instruction: The Teacher (6-6) Block*Prerequisite: Education 295F or consent of instructor.*

This course focuses on the nature of the teacher role. Specifically, it examines the nature of teaching as an occupation drawing on selected documents from the fields of educational sociology, social psychology and administration.

256A • The Methodology of the Affective Domain (4) Brown*Prerequisite: Consent of instructor.*

Theories of and practices in the affective domain drawn from humanistic psychology and related disciplines will be examined and applied to classroom or institutional functionings. There will be an experiential component.

256B • The Field of Confluent Education: Survey and Synthesis (4) Shapiro*Prerequisite: M.A. sequence in confluent education.*

Provides a forum framework for review and integration of major theories, concepts, methods of inquiry techniques, and applications of confluent education. Inputs from professors, practitioners, and seminal readings in the field.

257A—B—C • Practicum in Design of Instruction (1-1-1) Copeland*Prerequisite: Enrollment in M.A. in Education, Instruction emphasis program; access to an instructional setting, consent of instructor.*

Guided experience in the development and evaluation of Instructional Sequences which will be the basis of the Master's Thesis.

258A • Seminar in Curriculum: Reading (4) Dixon, Drum*Prerequisite: Basic procedures course in the area of specialization; a minimum of one year of teaching experience; consent of instructor*

Recent developments, review and evaluation of current research in curriculum.

258C • Seminar in Curriculum: Language Arts (4) Dixon

Prerequisite: Basic procedures course in the area of specialization; a minimum of one year of teaching experience; consent of instructor.

Recent developments, review and evaluation of current research in the language arts curriculum.

260 • Seminar: The Creative Process (4) Brown

Prerequisite: Graduate standing and consent of instructor.

A discussion of the research on and theories of creativity. Emphasis will be on psychological process rather than on creative productivity. Major foci will be on descriptive studies of the creative person and contributions of the methodology of creative growth.

261A • Small Group Leadership (4) Shapiro

Prerequisite: Consent of instructor.

An introduction to training leaders in theory and practice of leading small face-to-face groups. Course will cover goals and purposes of small groups such as committees and boards, classrooms and personal growth groups, emphasizing leader skills in group processes.

261B • The Dynamics of Planned Change (4) Shapiro

Prerequisite: Consent of instructor.

Examination of role of change agents to various client systems with exploration of theories of social change, providing theoretical framework from which to understand systemic problems of individuals and groups. Development of skills of consultants to various social systems.

261C • Human Relations in Education (4) Shapiro

Prerequisite: Consent of instructor.

Application of technology of change agency, group dynamics and encounter groups or T-Groups to educational systems. Survey of educational institutions and study of human relations procedures available for improvement. Development of "design" capacities in planning human relations programs.

262A • Systematic Training in Counseling Strategies: Observing and Recording Behavior (1) Atkinson

Prerequisite: Admission to the Counseling Psychology Program.

Laboratory course designed to help individuals learn to observe and record data pertaining to individual and group as well as institutional patterns which affect behavior of the individual. Student performance must meet specified levels of competency to pass the course.

262B • Systematic Training in Counseling Strategies: Interpreting Behavior (1) Staff

Prerequisite: Admission to the Counseling Psychology Program.

This laboratory course is designed to help students learn to interpret data gained through observations which allow them to put causal relationships into perspective. Student performance must meet specified levels of competency to pass the course.

262C • Systematic Training in Counseling Strategies: Modifying Behavior (1) Hosford

Prerequisite: Admission to the Counseling Psychology Program.

This laboratory course is designed to help students develop and employ strategies that allow them to change some aspect of the individual, group or institution in a manner that directly results in modification of the individual.

262D • Systematic Training in Counseling Strategies: Evaluating Behavior Change (1) Casas

Prerequisite: Admission to the Counseling Psychology Program.

This laboratory course is designed to help students develop and test feedback and research strategies to determine the effectiveness of various modification strategies employed in the counseling process. Student performance must meet specified levels of competency to pass the course.

263A • Counseling Techniques (3) Casas, Hosford

Prerequisites: Consent of instructor.

Course explores underlying assumptions, examines supportive research, and provides prerequisite experience for a variety of counseling strategies. Counseling strategies studied include assertive training, behavior rehearsal, bibliotherapy, desensitization, gestalt awareness training, guided fantasy, self-control techniques, social modeling, and reinforcement counseling.

263B • Advanced Counseling Techniques (3) Hosford

Prerequisites: Education 263A.

Course explores underlying assumptions, examines supportive research, and provides prerequisite experience for a variety of counseling strategies. Counseling strategies studied include assertive training, behavior rehearsal, bibliotherapy, desensitization, gestalt awareness training, guided fantasy, self-control techniques, social modeling, and reinforcement counseling.

264A • School and Community Counseling (3) Atkinson

Prerequisites: Consent of instructor

Students are exposed to a variety of counselor roles, counseling techniques, and current issues associated with school and community agency counseling

264B • Student Personnel Services in Higher Education (3) Birch

Prerequisites: Consent of instructor.

Course provides both a historical and comparative understanding of organized services for students in higher education. Philosophical bases for student personnel services and contemporary issues in American higher education are reviewed and discussed.

264C • Educational and Vocational Guidance (3) Staff

Prerequisite: None.

Examination of vocational development theory, the sociology of work, and career decision-making. Counseling strategies for enhancing life planning as a lifelong process will be discussed

265 • Fieldwork in Counseling and Concurrent Seminar (3) Staff

Prerequisite: Consent of instructor and enrollment in the Counseling Psychology Program.

Intensive supervised fieldwork in counseling. A minimum of one full day in an approved practicum setting plus individual and group supervision at the University are required.

266A—B—C • Psychological Testing in Education (3-3-3) Casas, Hosford

Prerequisite: Admission to Counseling Psychology Program.

An intensive study of human development and personality dynamics in terms of their assessment through clinical instruments and techniques. Students will learn to choose, administer, and utilize data from techniques commonly used by school psychologists and college counseling centers. (Yearlong, weekly classes and practicum, plus supervised application in the fieldwork setting.)

267 • Group Dynamics and Their Applications in Education (4) Shapiro

Prerequisite: Consent of instructor.

Participation in a training group followed by an examination of school applications for group procedures.

268A • Advanced Fieldwork in Counseling: Educational and Community Agency Settings (3) Casas

Prerequisite: Consent of instructor and 9 units of Education 265.

Advanced supervised fieldwork in counseling. A minimum of one full day in an approved setting plus individual and group supervision at the University are required.

268B • Advanced Fieldwork in Counseling: School Psychology (3) Staff

Prerequisite: Consent of instructor and 9 units of Education 265.

Advanced supervised fieldwork in an approved school setting under the supervision of a credentialed school psychologist. A minimum of one full day of fieldwork plus individual and group supervision at the University are required.

268C • Advanced Fieldwork in Counseling: Doctoral (3) Staff

Prerequisite: Enrollment in Counseling Psychology program and 9 units of Education 265.

Advanced supervised fieldwork in counseling. A minimum of one full day in an approved setting plus individual and group supervision at the University are required

268D • Advanced Fieldwork in Counseling: Supervision Seminar (3) Staff

Prerequisite: Consent of instructor and 3 units of Education 268C.

A minimum of 8 hours of fieldwork in supervision of counselor trainees at the University in individual and group supervision settings. Participation in a weekly supervision seminar is also required.

268E • Advanced Fieldwork in Counseling: Counselor Education (3) Staff

Prerequisite: Completion of at least one full year of doctoral studies in Counseling Psychology.

Supervised fieldwork experience in counselor education. A minimum of 3 hours per week of classroom experience plus 3 hours in individual and group supervision seminars.

268F • Advanced Fieldwork in Counseling: Internship (1-6) Staff

Prerequisite: Completion of 9 units of Education 265 or Education 268C and consent of the Counseling Psychology faculty.

Advanced internship in counseling and/or supervision in an approved school or agency setting. A minimum of 21/2 full days of paid fieldwork under the supervision of a licensed or credentialed school or counseling psychologist.

269A • Marriage and Family Counseling (3) Casas

Prerequisite: consent of instructor.

The purpose of this course is to examine the interaction patterns of distressed families, study in detail the psychoanalytic, behavioral, and communicative-interactive approaches to family counseling, and expose students to a variety of family counseling techniques.

269B • Fieldwork in Family Counseling (3) Staff

Prerequisite: Consent of instructor and enrollment in the Counseling Psychology Program, must have completed three quarters of Education 265.

The purpose of this course is to provide intensive supervised fieldwork in marriage and family counseling. A minimum of one full day in an approved marriage and family practicum setting will be required.

270A • Language and Bilingual/Cross-Cultural Education (4) Gonzalez

Prerequisite: Admission to the Bilingual/Cross-Cultural Emphasis or the Specialist Program.

A presentation of contrasts between English and Spanish at the phonological, syntactic, morphological, and semantic levels. Emphasis on the first language base for deviations in the second language.

270B • Second-language Learning and Bilingual Education (4) Gonzalez

Prerequisite: Admission to the Bilingual/Cross-Cultural Specialist Program.

A detailed examination of second-language-learning theories and their implications for learning English and Spanish as second languages; presentation of similarities and differences between reading in Spanish and English, and an in-depth look at language dominance, language proficiency and the role of contrastive analysis second-language diagnosis.

270D • Seminar in Bilingual/Cross-Cultural Education: Concepts and Theories (4) Staff

Prerequisites: Admission to the Bilingual/Cross-Cultural Emphasis or the Specialist Program; consent of instructor.

Develops a theoretical foundation in Bilingual/Cross-Cultural Education with emphasis on its (a) history, (b) rationale, (c) goals and objectives, (d) typologies, (e) legislation regarding it, and (f) learning theories and bilingualism.

270F • Assessment in Bilingual Education Programs (4) Staff

Prerequisite: Admission to the Bilingual/Cross-Cultural Emphasis or the Specialist Program; consent of instructor.

This course examines alternative evaluation approaches for bilingual programs; outlines the role of the evaluator in the bilingual program; and examines the instruments and processes currently in use in bilingual programs throughout the country.

270G • Bilingual Curriculum Development in Content Areas (4) Staff

Prerequisite: Admission to the Bilingual/Cross-Cultural Emphasis or the Specialist Program; consent of instructor.

Designed to develop a theoretical foundation in bilingual/cross-cultural education and its application to curriculum development. Topics covered include: (a) rationale for bilingual/cross-cultural education, (b) goals and objectives for bilingual/cross-cultural education in the United States, (c) development of curriculum in the content areas of social science, mathematics, science, and related areas, with special emphasis on the use of technical vocabulary in Spanish and the development of a scope and sequence for a specified level. Not offered 1979-80.

270H • Culture and Learning (4) San Miguel

Prerequisite: Admission to the Bilingual/Cross-Cultural Emphasis or the Specialist Program; consent of instructor.

An exploration of the possible effects of cultural background and cultural values on the learning styles of the Chicano child; the development of appropriate instructional strategies; implications for the bilingual bicultural classrooms.

271 • Language Acquisition (4) Goldman

Survey of major theories and research pertaining to the acquisition of language. Acquisition of language skills within the areas of phonology, syntax, and semantics are considered. In addition, the development of discourse processing skills and of knowledge about language are considered. Primary emphasis is on acquisition of English as a native language and implications for the acquisition of other languages are discussed.

272 • Contrastive Analysis (4) Gonzalez

Prerequisite: Articulatory phonetics, or introductory course in linguistics.

A systematic comparison of the linguistic systems of English and Spanish, including their phonetic/phonemic systems, their syntactic patterns, and their semantic similarities and differences. Includes practice in the analysis of interference from one language to another.

273 • Articulatory Phonetics (4) Gonzalez

A detailed examination of the phonemic and phonetic systems of English and Spanish, including a descriptive framework for analyzing sounds. The accurate transcription of sounds in both languages will be emphasized, as will the areas of conflict between English and Spanish sound systems.

274 • Practicum: Bilingual/Cross-Cultural Education (1-6) Staff

Prerequisite: Admission to the Bilingual/Cross-Cultural Specialist Credential Program.

Candidates will be involved in supervised instructional and curriculum development activities which are designed to enhance their competence as bilingual educators.

275 • Counseling Theories: Seminar (3) Hosford

Prerequisite: Consent of instructor.

A critical examination of modern theories of counseling, plus intensive supervision of counseling practice.

276 • Research in Counseling Practices: Seminar (2) Hosford

Prerequisite: Consent of instructor.

Examination of problems in various counseling applications, recent theoretical developments. Continuation of group and individual supervision.

277 • Specialized Counseling: Seminar (3) Atkinson, Casas, Hosford

Prerequisite: Consent of instructor and/or enrollment in the Ph.D. Counseling Psychology Program.

An examination of the diverse contexts in which counseling practices are relevant, plus their effects upon theory and techniques. Continuation of supervision.

278 • Cross-Cultural Counseling (3) Atkinson

The course reviews current literature on minorities with an emphasis on research related to cross-cultural counseling. Counselor roles and counseling modalities identified as effective in cross-cultural counseling are discussed. Social and individual barriers to cross-cultural counseling are explored.

280 • Seminar: Issues and Trends in Bilingual/Cross-Cultural Education (4) Gonzalez

Prerequisite: Admission to doctoral study or consent of instructor.

An examination of significant issues and trends in the theory and practice of bilingual/cross-cultural education at the national, state and local levels.

281 • Seminar: Program Design in Bilingual/Cross-Cultural Education (4) Gonzalez

Prerequisite: Admission to doctoral study or consent of instructor.

A systematic study of major program models in bilingual/cross-cultural education, including the analysis of current methodologies and the design of a workable program to meet specific needs.

283 • Curriculum and Instruction in Confluent Education (4) Phillips

Prerequisite: Consent of instructor.

The systematic development of curricular structures and instructional methodology derived from the philosophy and theory of Confluent Education. Topics include: (a) basic curriculum design, (b) confluent instructional strategies, (c) methodology for diagnosing student concerns and learning styles, (d) evaluation. Class will integrate lectures, discussions, laboratory work, and field observation.

284 • Philosophical Dimensions of Confluent Instruction (4) Shapiro

Prerequisite: Enrollment in M.A. in Education (Confluent Program) and consent of instructor.

Consideration of values, ethics, definitions of reality to help student clarify and refine his philosophical framework for teaching, as well as understand underlying philosophical principles for education in general. Attention given to special problems of confluent curriculum and teaching methodology.

287 • Organizational Leadership in Literature (4) Iannaccone

Prerequisites: None

Readings from organizational theory and novels of military, economic, educational, and governmental organizations. Organizational issues emphasized are: executive succession and relat-

ed organizational changes, bureau pathology, interagency conflict, means-ends reversals, organizational mindlessness and human stress.

288A • Principles of Confluent Education (3) Phillips

Course applies to the methodology of Confluent Education to help teachers learn to alter those patterns of thought, feeling, and action which interfere with their effectiveness as teachers. Classroom applications of this methodology in assisting students to change non-productive learning patterns are also studied.

288B • Issues in Confluent Education (4) Brown

Prerequisite: Consent of instructor.

Survey of key problems and trends in Confluent Education. Strategies for introducing Confluent Education into educational systems, personal and intellectual criteria for selection of confluent educators. Research and assessment procedures and future of confluent and other humanistically-oriented approaches.

289 • Practicum in Confluent Education (1-6) Staff

Prerequisite: Admission to M.A., M.Ed or Ph.D. in Confluent Education.

Supervised practice in applications of techniques, methods, and curricula of Confluent Education in public schools, private schools, higher education, community education and other educational programs or systems.

290 • Artificial Intelligence (4) Cotton

Prerequisite: None.

Introduction to computer simulation of intellectual behavior. Representation, problem solving, natural language comprehension. LISP programming language will be used to display existing simulations and develop new ones. Students are encouraged to take Computer Sciences 150 concurrently, if not before.

291 • Cognition and Language in Early Childhood (4) Staff

Prerequisite: Admission to the doctoral program in Education.

This course considers various theoretical views of the relationship between cognition and language acquisition. Such topics as concept formation, mediation, communication, intentionality, perception, sensory motor skills and others will be explored.

292 • Interview and Observational Methods for Early Childhood (4) Zimmer

Prerequisite: Admission to the doctoral program in Education.

The course will provide methods of interviewing children from ages 2 to 8. Emphasis is placed in "clinical" interview techniques using age appropriate materials and language to provoke nonsuggestable responses. Methods of observing the child at play and in natural settings will also be presented. Not offered 1979-80.

293 • The Study of Instruction (4) Block

Prerequisite: Consent of the instructor.

A detailed review of the current state of the art in instructional research. Special attention will be paid to empirical work from instructional psychology. Not offered 1979-80

294 • Systems of Individualized Instruction (4) Block

Prerequisite: Consent of the instructor.

A detailed examination of current approaches to the individualization of instruction. The course will explicate each approach and explore their respective psychological underpinnings. Not offered 1979-80

295A—C—E—F • Seminar in Educational Psychology (4-4-4-4) Block, Cotton, Hubert, Thomas

Prerequisite: Admission to Ph.D. Program.

A. Affective Processes, C. Cognitive Learning, E. Structure of Intellect, F. Psychological Base for Modern Instructional Procedures. Sections A—F are given as separate units and may be taken more than once by a student with the consent of the instructor.

297A • Ways of Knowing (4) Iannaccone

Prerequisites: Admission to doctoral program in Education.

A seminar focusing on the varied approaches to inquiry utilized by disciplines in the natural sciences, social sciences, fine arts, and humanities.

Professional Preparation in Teaching (300-393 Series)

These courses are designed for the professional sequence in approved credential programs. They provide theory related to field practice in teaching, and cover the design of instruction, teaching strategies, development of instructional materials and the psychology of learning. The student teaching experience provides the opportunity for application of university course work in practice. Courses in the 392 series have as a prerequisite admission to a teaching credential program at UCSB. The Education 392 series courses coincide with the calendar of the public schools.

R 390 • Curriculum and Instructional Procedures and Materials Used in Teaching Reading (1-2) Dixon, Drum

Prerequisite: Admission to the Single Subject Credential program.

Application of research and theory to procedures in the teaching of reading through problem solving situations, inductive reasoning and discovery, adapting instruction to individual reading needs.

This is an in-progress graded course over 2 quarters for a total of 3 units.

SE 390 • Special Education for the Regular Class Teacher (1-1-1) Staff

Prerequisites: Admission to fifth-year Credential program or consent of instructor.

An in-progress course on major topics in education designed for students preparing to teach regular (non-special education) elementary or secondary classes. Topics include the regular class teachers' role in the education of handicapped pupils; methods of accommodating a wide range of individual differences in the classroom.

SF 390 • Curriculum and Instructional Procedures and Materials Used in Teaching French (3)

Prerequisite: Required background in French.

Methodology of foreign language teaching with particular application to French.

SM 390 • Curriculum and Instructional Procedures and Materials Used in Teaching Mathematics (3) Cotter

Prerequisite: Required background in Mathematics.

Procedures, curriculum, research, and theory related to teaching and learning Mathematics.

SN 390 • Curriculum and Instructional Procedures and Materials Used in Teaching Spanish (3)

Prerequisite: Required background in Spanish.

Methodology of foreign language teaching with particular application to Spanish.

SS 390 • Curriculum and Instructional Procedures and Materials Used in Teaching Social Studies (1-1-1) Copeland

Prerequisite: Graduate standing. Required background in anthropology, economics, history, political science, sociology, geography, psychology, or combination social sciences.

This course is required of candidates for the Single Subject Credential in one of the named social sciences.

This is an in-progress graded course over 3 quarters for a total of 3 units.

ST 390 • Curriculum and Instructional Procedures and Materials Used in Teaching Science (3) McAda

Prerequisite: Required background in physical or life sciences.

Lecture-discussion sessions considering secondary school science curriculum materials and the objectives and teaching strategies appropriate to these materials.

E 391A • Teaching Procedures, Curriculum, and Instructional Materials Used in Teaching Mathematics in Elementary Schools (3) Cotter

Prerequisite: Graduate standing and enrollment in the Multiple Subjects Credential program.

The application of research and theory to classroom practice in the teaching of mathematics.

E 391B • Teaching Procedures, Curriculum, and Instructional Materials Used in Teaching Science in Elementary Schools (3) McAda

Prerequisite: Graduate standing and enrollment in the Multiple Subjects Credential program.

The application of research and theory to classroom practice in the teaching of science. *This is an in-progress graded course over 2 quarters for a total of three units.*

E391C • Teaching Procedures, Curriculum, and Instructional Materials Used in Teaching Social Studies in Elementary Schools (3) Copeland

Prerequisite: Graduate standing and enrollment in the Multiple Subjects Credential program.

The application of research and theory to classroom practice in the teaching of social studies.

This is an in-progress graded course over 2 quarters for a total of three units.

E 391D • Procedures, Curriculum, and Instructional Materials Used in Teaching Reading and Language Arts in Elementary Schools (2-3) Cogan

Prerequisite: Graduate standing and enrollment in the Multiple Subjects Credential program.

Application of research and theory to class-

room practice in the teaching of reading and language arts through problem solving situations, inductive reasoning and discovery, adapting instruction to individual reading needs.

This is an in-progress graded course over 2 quarters for a total of 5 units

E 391E • Seminar in Bilingual/Cross-Cultural Education: Teaching Strategies (3-3)

Prerequisite: Admission to the Bilingual/Cross-Cultural Emphasis Program.

An intensive examination of effective teaching methods for the Spanish-English classroom with particular emphasis on language arts area. Students will explore existing materials and applications and also learn of approaches for developing new and appropriate materials (formerly 270C)

EL 392 • Supervised Teaching: Elementary Schools (3-12) Staff

Prerequisite: Admission to the Multiple Subjects Credential program.

Supervised teaching.

R392A-B Secondary Reading Laboratory Field Experience (1-1) Dixon

Prerequisite: Consent of instructor.

Supervised field experience in reading instruction for secondary school teacher credential candidates.

SF 392 • Student Teaching French (3-9) Staff

Prerequisite: Admission to the Single Subject Credential program and consent of instructor.

Supervised teaching at the secondary level in French.

SM 392 • Student Teaching: Mathematics (3-6) Cotter

Prerequisite: Admission to the Single Subject Credential program in mathematics.

Supervised teaching at the secondary level in mathematics.

SN 392 • Student Teaching: Spanish (3-9)

Prerequisite: Admission to the Single Subject Credential program in Spanish.

Supervised teaching of the secondary level in Spanish.

SS 392 • Student Teaching: Social Studies (3-6) Staff

Prerequisite: Admission to the Single Subject Credential program in social studies.

Supervised teaching at the secondary level in social studies.

SST 392 • Student Teaching: Science Education (3-6) McAda

Prerequisite: Admission to the Single Subject Credential program in science.

Supervised teaching at the secondary level in science.

E 393 • Seminar in Student Teaching: Elementary & Special Education Module (2) Staff

Prerequisite: Graduate standing. Concurrent enrollment in Education E392.

This seminar will cover problems related to student teaching and also cover the requirements of teachers for mainstreaming children in compliance with P.L. 94-142: Special Education.

SF 393 • Problems Seminar in Teaching French & Special Education Module (2) Staff

Prerequisite: Taken concurrently with supervised teaching in French.

This seminar will cover problems related to student teaching and also cover the requirements of teachers for mainstreaming children in compliance with P.L. 94-142: Special Education.

SM 393 • Problems Seminar in Teaching Mathematics & Special Education Module (2) Staff

Prerequisite: Taken concurrently with supervised teaching in mathematics

This seminar will cover problems related to student teaching and also cover the requirements of teachers for mainstreaming children in compliance with P.L. 94-142: Special Education.

SN 393 • Problems Seminar in Teaching Spanish & Special Education Module (2)

Prerequisite: Taken concurrently with supervised teaching in Spanish.

This seminar will cover problems related to student teaching and also cover the requirements of teachers for mainstreaming children in compliance with P.L. 94-142: Special Education.

SS 393 • Problems Seminar in Teaching Social Studies & Special Education Module (2) Staff

Prerequisite: Taken concurrently with supervised teaching in social studies.

This seminar will cover problems related to student teaching and also cover the requirements of teachers for mainstreaming children in compliance with P.L. 94-142: Special Education.

ST 393 • Problems Seminar in Teaching Science & Special Education Module (2) McAda

Prerequisite: Taken concurrently with supervised teaching in science.

This seminar will cover problems related to student teaching and also cover the requirements of teachers for mainstreaming children in compliance with P.L. 94-142: Special Education.

Advanced Study and Research Courses (594-599 Series)

The 594-599 series of courses are for advanced study and/or research. Letter designations appearing after the course number refer to the area of specialty as follows:

- BI** Bilingual Education
- CE** Confluent Education
- CP** Counseling Psychology
- EP** Educational Psychology
- EX** Executive Program
- IE** International Education
- IN** Instruction
- LA** Language Development and Reading
- SE** Special Education

594CE • Special Topics (1-4) Brown, Iannaccone, Phillips, Shapiro

Prerequisite: Consent of instructor. May be repeated for maximum of eight units.

Special seminars devoted to reviews of research and to pursuit of research and/or scholarly interests in selected fields. For graduate students in master's or doctoral degree programs.

594CP • Special Topics (1-4) Atkinson, Casas, Hosford

Prerequisite: Enrollment in the counseling program and consent of instructor.

Special seminar will deal with an investigation of contemporary issues and problems in the field of counseling topics such as successful and unsuccessful intervention procedures used in counseling clients with drug problems.

594EP • Special Topics (1-4) Block, Cotton, Hubert, Pellegrino, Thomas, Zimmer

Prerequisite: Consent of instructor. May be repeated for maximum of eight units.

Special seminars devoted to reviews of research and to pursuit of research and/or scholarly interests in selected fields. For graduate students in master's or doctoral degree programs.

594EX • Special Topics (1-4) Boyan, Friedman, Glasman, Iannaccone, Jamgochian

Prerequisite: Consent of instructor.

Special seminars devoted to reviews of research and to pursuit of research and/or scholarly interests in selected fields. For graduate students in master's or doctoral degree programs.

594IE • Special Topics (1-4) Thomas

Prerequisite: Consent of instructor. May be repeated for maximum of eight units.

Special seminars devoted to reviews of research and to pursuit of research and/or scholarly interests in selected fields. For graduate students in master's or doctoral degree programs.

594IN • Special Topics in Instruction (3) Copeland

Prerequisite: Consent of instructor.

An exploration of special topics in instruction, especially relating to the theoretical basis and practical skills needed to evaluate instructional sequences in terms of desired pupil performance.

594LA • Special Topics (1-4) Dixon, Drum, Goldman

Prerequisites: Consent of instructor. May be repeated for maximum of eight units.

Special seminars devoted to reviews of research and to pursuit of research and/or scholarly interests in selected fields. For graduate students in master's or doctoral degree programs.

596BI • Directed Reading and Research (3-9) Gonzalez

Prerequisite: Admission to doctoral study or consent of instructor.

This course allows the student, under the direct guidance of the instructor, to pursue research in the area of bilingual/cross-cultural education as it relates to his/her chosen field of specialization.

596CE • Directed Reading and Research (2-4) Brown, Iannaccone, Shapiro

Prerequisite: Consent of instructor.

May be repeated for maximum of six units by master's degree students and for maximum of eight units by doctoral degree students. Individual tutorial and/or laboratory participation in special fields. For graduate students in master's or doctoral degree programs. Open to credential candidates by petition.

596CP • Directed Reading and Research (2-6) Atkinson, Casas, Hosford

Prerequisite: Graduate standing, enrollment in the counseling program, and consent of instructor.

Independent research and/or reading in counseling in areas not covered by courses offered.

596EP • Directed Reading and Research (2-4) Block, Cotton, Hubert, Pellegrino, Thomas, Zimmer

Prerequisite: Consent of instructor.

May be repeated for maximum of six units by master's degree students and for maximum of 36 units by doctoral degree students. Individual tutorial and/or laboratory participation in special fields. For graduate students in master's or doctoral degree programs. Open to credential candidates by petition.

596EX • Directed Reading and Research (2-4) Boyan, Friedkin, Glasman, Iannaccone, Jamgochian

Prerequisite: Consent of instructor.

Individual tutorial and/or laboratory participation in special fields. For graduate students in master's or doctoral degree programs. Open to credential students by petition.

596LA • Directed Reading and Research in Reading and Language Arts (2-4) Dixon, Drum, Goldman

Prerequisite: Consent of instructor

Individual tutorial in directed reading and the review of pertinent research on special topics in relation to elementary reading and/or language arts.

596SE • Directed Reading and Research in Special Education (2-12) Staff

Prerequisites: Open to students in Special Education Program or consent of program leader.

Supervised research in the field of Special Education and related areas of concentration involving handicapped children.

597BI • Individual Study for Comprehensive Examinations (3) Gonzalez

Prerequisite: Admission to master's degree program in bilingual education.

Preparation for master's comprehensive exam in bilingual education.

597CE • Individual Study for Comprehensive Examinations (2-12) Brown, Iannaccone, Shapiro

Prerequisite: Consent of instructor.

Preparation for master's or Ph.D. comprehensive examinations in confluent education.

597CP • Individual Study for Comprehensive Examinations (2-12) Atkinson, Casas, Hosford

Prerequisite: Completion of 24 graduate units in the counseling program for master's students; completion of 36 graduate units in the counseling program for Ph.D. students.

Preparation for master's degree comprehensive or doctoral examinations. Contracts to be worked out with student's major professor.

597EP • Individual Study for Comprehensive Examination (2-12) Block, Cotton, Hubert, Pellegrino, Thomas, Zimmer

Prerequisite: Consent of instructor.

Preparation for master's or Ph.D. comprehensive examinations in Educational Psychology.

597EX • Individual Study for Comprehensive Examinations (2-12) Boyan, Friedkin, Glasman, Iannaccone

Prerequisite: Admission to Educational Administration Program.

Preparation for master's or Ph.D. comprehensive examination in Educational Executive Program.

597LA • Individual Study for Comprehensive Examinations (2-12) Drum, Goldman

Prerequisite: Consent of instructor.

Preparation for master's or Ph.D. comprehensive examinations in Language Development and Reading.

598EP • Master's Thesis Research and Preparation (2-12) Block, Cotton, Hubert, Pellegrino, Thomas, Zimmer

Prerequisite: Consent of instructor.

Supervised research and writing of the thesis in master's degree for Educational Psychology.

598SE • Master's Thesis Research and Preparation (2-12) Semmel, M.

Prerequisite: Consent of instructor.

Supervised research and writing of the thesis for the master's degree in Special Education.

599CE • Ph.D. Dissertation Preparation (2-12) Brown, Iannaccone, Shapiro

Prerequisite: Consent of instructor.

Writing of dissertation in doctoral degree program in Confluent Education.

599CP • Ph.D. Dissertation Preparation (2-12) Atkinson, Casas, Hosford

Prerequisite: Completion of doctoral qualifying exams.

Writing the dissertation for doctoral degree in Counseling Psychology.

599EP • Ph.D. Dissertation Preparation (2-12) Block, Cotton, Hubert, Pellegrino, Thomas, Zimmer

Prerequisite: Consent of instructor.

Writing of dissertation for doctoral degree program in Educational Psychology.

599EX • Ph.D. Dissertation Preparation (2-12) Boyan, Friedkin, Glasman, Iannaccone

Prerequisite: Consent of instructor.

Writing of dissertation for doctoral degree in Educational Administration Program.

599LA • Ph.D. Dissertation Preparation (2-12) Drum, Goldman

Prerequisite: Consent of instructor.

Writing of doctoral dissertation in Language Development and Reading.

599SE • Ph.D. Dissertation (2-12) Semmel, M.

Prerequisite: Consent of instructor.

Writing of dissertation for doctoral degree in Special Education.

COLLEGE OF ENGINEERING

J. E. Myers, Ph.D., *Professor of Chemical Engineering, Dean, College of Engineering.*

Rose O'Brien MS., *Assistant to the Dean for Minority Affairs.*

Henry J. Nawoj, Ph.D., *Assistant to the Dean for Undergraduate Studies.*

Concerns of the college:

The College of Engineering provides professional undergraduate and graduate education in five disciplines: computer science, chemical, electrical, mechanical and nuclear engineering. The chemical, electrical, mechanical, and nuclear engineering programs are accredited by the Accreditation Board for Engineering and Technology. For additional information see Chapter L.

Lower Division courses

3A—B • Computer Solutions of Engineering and Science Problems (3-2) Staff

Prerequisites: Mathematics 3A—B, concurrently.

Applications of computers to engineering and scientific problems, FORTRAN language programming, elements of numerical analysis, including introduction to error sources, recursion, numerical calculus, root finding, etc. Students will use the computer.

Available to lower division students in engineering, science and mathematics. Not recommended for upper division students. (F,W).

Upper Division courses

100 • Engineering Cost-Benefit Analysis (3) Staff

Prerequisite: Upper-division standing in engi-

neering or consent of instructor.

Engineering feasibility factors and engineering economic analysis. Analysis of alternatives and estimates of demands and costs in engineering. Probability, uncertainty and risk. Environmental impact analysis. (F, S)

170 • Introductory Biomedical Engineering (3) Staff [B2]

Prerequisite: Senior standing in engineering or consent of instructor.

Survey of application of engineering principles and methods to problems arising in the life sciences (medicine and biology); analysis of the function and principles of operation of living systems; modeling and simulation of physiological regulatory systems; physiological philosophy of instrument design; etc. (W)

College Advising and Publications:

The Undergraduate Office provides general counseling for all undergraduates in the College of Engineering. Departmental major advisors are also assigned by the individual departments of the College of Engineering.

The *Announcement of the College of Engineering* is published annually about July 1.

Correspondence Information:

Dean, College of Engineering, Engineering 1010, University of California, Santa Barbara, CA 93106, Phone 805-961-3207.

Undergraduate Office, College of Engineering, Engineering 1006, University of California, Santa Barbara, CA 93106, Phone 805-961-2809.

Graduate Courses

270ABC • Physiological Basis of Biomedical Engineering (3) Horvath

Prerequisite: Undergraduate course in control systems or consent of instructor.

Provides an intensive presentation of the physiology of a single organ system and the application of this knowledge to engineering concepts. Systems covered will vary with student interest. Examples are the cardiovascular, respiratory, renal, endocrine, metabolism or transport systems. (F,W,S)

Repetition of Subject Matter in Different Courses:

Students will not receive credit toward graduation even as a free elective if they repeat what is essentially the same subject in different courses. Examples of such redundancy are (1) Engr 3AB, ECE5, Cmp Sc 5 and Math 6A and (2) Math 3ABC and Math 34ABC.

Chemical and Nuclear Engineering

Professors

- Henri J. Fenech, Sc.D., *Massachusetts Institute of Technology; reactor engineering, safety and economics.*
- Owen T. Hanna, Ph.D., *Purdue University; theoretical methods.*
- Duncan A. Mellichamp, Ph.D., *Purdue University; process dynamics and control, real-time digital control, and engineering economics.*
- John E. Myers, Ph.D., *University of Michigan; transport of mass, energy and momentum (Dean, College of Engineering).*
- A. Edward Profio, Ph.D., *Massachusetts Institute of Technology; reactor physics, nuclear instrumentation, bionuclear engineering.*
- Robert G. Rinker, Ph.D., *California Institute of Technology; chemical kinetics, reactor design, and catalysis.*
- Orville C. Sandall, Ph.D., *UC Berkeley; transport of mass, energy and momentum and equilibrium separation processes.*
- Dale E. Seborg, Ph.D., *Princeton University; process dynamics and control, computer control, (Chairperson).*

Associate Professors

- G. Robert Odette, Ph.D., *Massachusetts Institute of Technology; radiation effects and materials technology for fission and fusion reactors. Environment (Vice Chairperson).*

Assistant Professors

- H. Chia Chang, Ph.D., *Princeton University; chemical reactor modeling, applied mathematics*
- Husam Gurol, Ph.D., *University of Michigan; statistical mechanics, nuclear reactor physics, plasma physics, and polymers.*
- Glenn E. Lucas, Ph.D., *Massachusetts Institute of Technology; radiation damage to structural materials, mechanical and structural analysis of nuclear systems.*

Concerns of the Department

The Department prepares students for professional careers in chemical engineering or in nuclear engineering. At the undergraduate level, emphasis is placed on a thorough background in the fundamental principles of science and engineering. This background is strongly reinforced by laboratory courses in which the student becomes familiar with the application of theory. At the graduate level, the student is further required to demonstrate competence in conducting basic and applied research. Degrees offered in chemical engineering include the B.S., M.S., and Ph.D.; and in

nuclear engineering, they include the B.S. and M.S. degrees. A Ph.D. in Chemical Engineering with a nuclear emphasis can be pursued.

The basic areas of teaching in chemical engineering include thermodynamics, mass transfer, heat transfer, fluid mechanics, chemical kinetics, process dynamics and control, and theoretical methods. In nuclear engineering they include nuclear and energy transport, nuclear systems, nuclear radiations, materials science, and theoretical methods. Students are prepared to solve significant real engineering problems which can be related to environment, energy conservation, ecology and new technology. Faculty research interests include: biochemical engineering, real-time computer control, mathematical modeling, catalysis, chemical reactor stability and dynamics, nucleate boiling heat transfer, process control, heat and mass transfer in non-Newtonian fluids, gas absorption with chemical reaction, neutron radiography, nuclear radiation effects on materials, tritium recovery in lithium-blanketed fusion reactors, neutron activation analysis for trace pollutants, heat and momentum transport in nuclear reactors, flow and fracture mechanisms in structural materials, microstructure and mechanical property test development.

Laboratory Facilities of the Department

The real-time digital computing laboratory and the process dynamics and control laboratory in chemical engineering contain a digital computer network consisting of two DGC Nova minicomputers and a DGC Eclipse computer. All computers are fully equipped with input/output peripherals, bulk storage, interface to the campus ITTEL AS/6 computer, interface to the department's analog computing facility (for hybrid computation), and analog and binary interfaces for interconnection to experimental processes and instruments in all department laboratories. Laboratory scale equipment is available for the demonstration of liquid-level, heat transfer, gas pressure surge systems, etc. Fully graphic on-line terminals are connected to the campus computer.

The transport laboratory in chemical engineering includes an infrared radiation detector and oscilloscope, gas chromatographs, digital integrator, automatic titrimer, wetted-wall column, Baratron pressure sensor, UV and visible-range spectrophotometer, micro-manometers, vacuum oven and pumps, high-speed potentiometric recorders, liquid diffusion cell, hot-wire anemometers, viscosimeters and analytical balances.

Students in chemical engineering also have access to the kinetics and reactor design laboratory which includes gas chromatographs, digital integrator, gas diffusion cell, high-vacuum facility, autothermal reactor facility, infrared spectrophotometer, chromatographic reactor, high-speed potentiometric recorders, high-temperature furnace, semi-micro analytical balance, glow-plasma facility, multiplexed

signal scanning system, differential pressure gauges, wet-test meters, and a pH meter.

The neutronics laboratory in nuclear engineering includes the following: L-77 nuclear reactor, 200 KeV Cockcroft-Walton accelerator, pulsed neutron source, subcritical assembly, standard pile, fast-spectrum sphere, californium-252 and plutonium beryllium neutron sources.

The nuclear measurements laboratory includes the following: nuclear radiation detectors, lithium-drifted germanium gamma ray spectrometer, modern solid-state nuclear electronics systems, multichannel analyzer, minicomputer, on-line computer terminal, isotope sources, X-ray machine, nuclear medicine facilities.

The nuclear reactor engineering laboratory includes a thermal contact-resistance apparatus, heat-transfer loop for research in heat transfer and fluid flow in a gas-cooled fast breeder reactor, and other equipment for research in reactor engineering.

The materials science laboratory is equipped with a servo-hydraulic, closed-loop fatigue testing system, an X-ray diffraction and emission system, a tensile-testing machine, creep measurement system, a hardness and microhardness tester. Complete metallographic facilities and heat treating facilities are also available.

Departmental Advising and Publications

Each undergraduate majoring in chemical engineering or in nuclear engineering is assigned a faculty adviser by the department chairperson. The adviser counsels the student on matters of concern whether academic or personal. Graduate students are assigned research advisers.

The Department publishes three separate brochures: one describing the undergraduate and graduate programs in nuclear engineering; another describing the undergraduate program in chemical engineering; and a third describing the graduate program in chemical engineering. The College of Engineering also publishes an annual announcement describing the College and each of the departmental programs including details of courses offered and research publications of the faculty. Copies of any of the publications listed above can be obtained by writing to the department chairperson in Chemical and Nuclear Engineering.

Bachelor of Science—Chemical Engineering

(Accredited by the Engineers' Council for Professional Development)

Preparation for the major

In preparing a program in chemical engineering a student should plan to meet the requirements in General Education common to all the engineering curricula (described under the heading "College of Engineering"), and should take the following courses:

72 Lower Division Units are required: Engineering 3A—B: Computer Solutions of Engineering & Science Problems; Chemical Engineering 10: Introduction to Chemical Engineering; Chemical Engineering 110A—B: Chemi-

cal Engineering Thermodynamics. Chemistry 1A—B—C: General Chemistry; Chemistry 1AL—BL—CL: General Chemistry Laboratory; Electrical Engineering 6A—B: Circuits and Electronics; Mathematics 3A—B—C: Analytical Geometry and Calculus; Mathematics 5A—B—C: Calculus for Science & Engineering Students; Mechanical Engineering 10: Introduction to Engineering Mechanics; Physics 7A—B—C: Physics for Engineers; Physics 7BL—CL: Physics Laboratory.

Upper Division major

57 Upper Division units are required: Chemical Engineering 120A—B—C: Transport Processes; Chemical Engineering 128: Equilibrium Stage Processes; Chemical Engineering 130A: Theoretical Methods in Chemical & Nuclear Engineering; Chemical Engineering 140A—B: Chemical Kinetics of Industrial Processes; Chemical Engineering 150A—B: Chemical Process Dynamics and Control; Chemical Engineering 180A—B: Chemical Engineering Laboratory; Chemical Engineering 182: Design and Cost Principles of Chemical Processes; Chemistry 113A—B: Physical Chemistry; Chemistry 130A—B: Elementary Organic Chemistry; Nuclear Engineering 115: Modern Materials Science.

The requirements for admission as a freshman in the College of Engineering are listed earlier in this catalogue. Transfer students who have completed most of the Lower Division courses listed above and are entering the junior year of the chemical engineering program may take ChE/10 in the fall quarter concurrently with ChE/120A. No entrance examination is required.

Cooperative Program—Chemical Engineering and Chemistry: Chemical engineering students with a strong interest in chemistry are advised to consider a five-year program leading to B.S. degrees in both chemical engineering and chemistry. Students may obtain details of the program from the Department of Chemical and Nuclear Engineering or the Department of Chemistry. Students are advised to consider applying for simultaneous registration in the Colleges of Engineering and Letters & Science in order to complete B.S. programs in both Engineering and Chemistry.

Other double majors can be arranged on an individual basis in areas such as chemical engineering and biological sciences or chemical engineering and nuclear engineering.

Bachelor of Science—Nuclear Engineering

Preparation for the major

The undergraduate curriculum in nuclear engineering provides an education in all the basic areas of nuclear engineering. In addition to meeting the requirements in General Education common to all the engineering curricula, the student should take the following courses:

68 Lower Division Units are required: Engineering 3A—B: Computer Solutions of Engineering & Science Problems; Nuclear Engineering 10: Introduction to Nuclear Engineering; Nuclear Engineering 112: Principles of Nuclear Energy Conversion; Chemistry 1A—B—C: General Chemistry; Chemistry 1AL—BL—CL: General Chemistry

Laboratory; Physics 7A—B—C: Physics for Engineers; Physics 7BL—CL: Physics Laboratory; Mathematics 3A—B—C: Analytical Geometry and Calculus; Mathematics 5A—B—C: Calculus for Science & Engineering Students; Mechanical Engineering 10: Introduction to Engineering Mechanics; Electrical Engineering 6A—B: Circuits and Electronics.

Upper Division major

59 Upper Division units are required: Nuclear Engineering 111: Isotopes and Applied Radiations; Nuclear Engineering 115: Modern Materials Science; Nuclear Engineering 116: Nuclear Materials & Radiation Effects; Nuclear Engineering 121: Nuclear Measurements Laboratory; Nuclear Engineering 122: Nuclear Safety & Environmental Impact; Nuclear Engineering 125: Neutronics Laboratory; Nuclear Engineering 130A—B: Nuclear Systems Engineering and Design; Nuclear Engineering 140A—B: Nuclear Systems Theory; Nuclear Engineering 145: Mathematical Methods in Nuclear Engineering; Nuclear Engineering 150: Nuclear Power Systems Design; Chemical Engineering 120A—B: Transport Processes; Nuclear Engineering 144: Theoretical Methods in Reactor Analysis; Physics 115A—B: Elementary Quantum Mechanics & Applications; Physics 124: Nuclear Physics.

The requirements for admission to the program as a freshman are those of the College of Engineering. Transfer students who have completed the majority of the Lower Division courses listed above will be accepted in the program as juniors. There is no entrance examination.

Cooperative Program—Nuclear Engineering and Physics: Nuclear engineering students with a strong interest in physics are advised to consider a five-year program leading to a B.S. degree in nuclear engineering and a B.A. or B.S. degree in physics. Students may obtain details of the program from the Department of Chemical & Nuclear Engineering or the Department of Physics. Students are advised to consider applying for simultaneous registration in the Colleges of Engineering and Letters & Science in order to complete the degree programs in both Engineering and Physics.

Graduate programs

Graduate programs are offered in chemical engineering leading to the degrees of Master of Science and Doctor of Philosophy in chemical engineering and Master of Science in nuclear engineering. Although the Ph.D. degree is not yet offered in nuclear engineering, students may elect to take a substantial portion of their course work in the nuclear field and to do their doctoral dissertation under the direction of the nuclear engineering faculty.

Master of Science in Chemical Engineering

Requirements

Acceptance for admission to the Master of Science program is subject to the admission requirements of the Graduate Division. It is expected that most applicants will have obtained undergraduate degrees in chemical engi-

neering. However, students with degrees in other branches of engineering or in science will be accepted with the provision that they take such undergraduate courses as prescribed by the department as prerequisites for an acceptable graduate course program in chemical engineering.

Knowledge of a foreign language will not be required for the M.S. degree in chemical engineering.

It is expected that most students will follow Plan I, although students with special backgrounds or requirements will be permitted, at the option of the Department, to follow Plan II. The details of these plans are as follows:

Plan I —Thirty units of course credit are required of which approximately fifty per cent must be chosen from graduate-level courses in chemical engineering. The remaining credits may be chosen from 100-or graduate-level courses in chemical engineering or other branches of engineering or science, as approved by the Department. No graduate credit is allowed for any course required for the B.S. degree in chemical engineering at UCSB. In addition to meeting the course requirement, each student is expected to pursue a research project, which may be either theoretical or experimental, and to describe the results of this research in a thesis. The final requirement is that the student must present and defend the thesis in an oral examination.

Plan II —Thirty-six units of course credit are required, of which approximately two-thirds must be chosen from graduate-level courses in chemical engineering. The remainder may be chosen on the same basis as outlined under Plan I. Because of the importance of the individual research project in graduate education, it is anticipated that the only persons allowed to follow Plan II will be those who have had adequate research experience prior to beginning graduate work or who plan to continue for doctoral work at UCSB. The final requirement of the M.S. program under Plan II is that the student must pass an oral examination based on the subjects studied in the graduate course program.

Master of Science in Nuclear Engineering

Requirements

Acceptance for admission to the Master of Science program is subject to the admission requirements of the Graduate Division. It is expected that most applicants will have obtained undergraduate degrees in nuclear engineering. However, students with degrees in other branches of engineering or in science will be accepted with the provision that they take such undergraduate courses as prescribed by the department as prerequisites for an acceptable graduate course program in nuclear engineering.

Knowledge of a foreign language will not be required for the M.S. degree in nuclear engineering.

It is expected that most students will follow Plan I, although students with special backgrounds or requirements will be permitted, at the option of the Department, to follow Plan II. The details of these plans are as follows:

Plan I —Thirty units of course credit are required of which approximately fifty per cent must be chosen from graduate-level courses in nuclear engineering. The remain-

ing credits may be chosen from 100-or graduate-level courses in nuclear engineering or other branches of engineering or science, as approved by the Department. No graduate credit is allowed for any course which has previously been taken for the B.S. degree in nuclear engineering. In addition to meeting the course credit requirement, each student is expected to pursue a research project, which may be either theoretical or experimental, and to describe the results of this research in a thesis. The final requirement is that the student must present and defend the thesis in an oral examination.

Plan II —Thirty-six units of course credit are required, of which approximately two-thirds must be chosen from graduate-level courses in nuclear engineering. The remainder may be chosen on the same basis as outlined under Plan I. Because of the importance of the individual research project in graduate education it is anticipated that the only persons allowed to follow Plan II will be those who have had adequate research experience prior to beginning graduate work or who plan to continue for doctoral work at UCSB. The final requirement of the M.S. program under Plan II is that the student must pass an oral examination based on the subjects studied in the graduate course program.

Doctor of Philosophy in Chemical Engineering

Requirements

Admission requirements are the same as for the degree of Master of Science.

There are no specific graduate course requirements. However, the student will be expected to plan and secure approval of a program of courses in chemical engineering and in related fields which will provide a depth of understanding in the principal areas of chemical engineering.

A written preliminary examination will be administered by the Departmental Graduate Committee during the first year. Students unable to demonstrate clearly their capability for doctoral work at this point will be advised to pursue the M.S. degree with thesis (Plan I). At the conclusion of the M.S. program, the student's cumulative performance in courses, research and preliminary examination will be reviewed by the Department and a final decision made whether or not to allow the student to continue in a program for the Ph.D. A student who has earned an M.S. degree at another university will be required to take the preliminary examination as a basis for evaluation at UCSB.

Knowledge of a foreign language will not be required of doctoral students.

At the end of the second year of graduate study if the student has continued to make satisfactory progress in

courses, a doctoral committee will be recommended to supervise all further progress and examinations. This committee will then administer an oral examination on subject matter related to the research and on any additional material it considers desirable and will make a recommendation on advancement to candidacy.

Each student is expected to pursue a research project which may be either theoretical or experimental and to describe the results of this research in a dissertation. The final requirement is that the student must present and defend a dissertation in an oral examination conducted by the doctoral committee. The period of time between advancement to candidacy and completion of the final oral examination is expected to be approximately one and one-half years.

Career opportunities

Chemical engineers do interesting and challenging work in chemical process design and development, in operation and management of chemical processing companies, and in fundamental and applied research. The B.S. degree program at UCSB also provides an excellent preparation for students who choose to continue their education in graduate degree programs or in professional schools of medicine, law and business.

Nuclear engineering offers varied opportunities for rapid professional advancement and a chance to make significant contributions to the challenging problems of energy, environment, health and society. Recent graduates of the UCSB program have obtained excellent jobs with architect engineer firms, utilities, manufacturers or the Department of Energy, or have been admitted to outstanding graduate schools for advanced education. Several have competed for and received DOE Intern appointments which pay tuition and full salary in graduate school after a year at DOE headquarters or laboratories.

Teaching Credentials

Students who complete a major in chemical engineering or nuclear engineering may be eligible to pursue a California teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180 Phelps Hall.

Correspondence information

**Department of Chemical and Nuclear Engineering,
Arts Building, Room 1234, University of
California, Santa Barbara, California 93106.
Phone: (805) 961-3412.**

Chemical Engineering

Lower Division course

Engineering 3A—B • Computer Solutions of Engineering and Science Problems (2-2) Staff

Prerequisites: Mathematics 3A—B, concurrently.

Applications of computers to engineering and scientific problems. FORTRAN language programming, elements of numerical analysis, including introduction to error sources, recursion, numerical calculus, root finding, etc. Students will use the computer.

Available to students in engineering, science and mathematics.

10 • Introduction to Chemical Engineering (4) Seborg [B2]

Prerequisites: Chemistry 1A—B—C; Mathematics 3A—B—C.

Elementary principles of chemical engineering. The major topics discussed include material and energy balances, stoichiometry, and thermodynamics.

Upper Division courses

Engineering 100 • Engineering Cost-Benefit Analysis (3) Staff

Prerequisite: Upper division standing in engineering or consent of instructor.

Engineering feasibility factors and engineering economic analysis. Analysis of alternatives and estimates of demands and costs in engineering. Probability, uncertainty and risk. Environmental impact analysis. (S)

110A—B • Chemical Engineering Thermodynamics (3-3) Staff

Prerequisite: Math 5A.

The first and second laws of thermodynamics are used to predict changes of state in frictional processes. Volumetric and phase behavior of real gases and liquids in multicomponent systems are studied. Consideration is given to chemical equilibrium in reacting systems.

120A—B—C • Transport Processes (4-3-3) Myers, Sandall [B2—120A only]

Prerequisites: Math 5A—B—C; Physics 7C.

Principles and applications of fluid mechanics, heat transfer and mass transfer in determining rates of transport processes.

128 • Equilibrium Stage Processes (3) Sandall

Prerequisites: Ch.E. 10, Ch.E. 110A.

Basic principles and design techniques of equilibrium-stage separation processes. Emphasis is placed on binary distillation, liquid-liquid extraction, and multicomponent distillation.

130A—B—C—D • Theoretical Methods in Chemical and Nuclear Engineering (3-3-3-3) Hanna [B2—130A and D only]

Prerequisite: Mathematics 5A—B—C.

Coordination and extension of previous work in chemical and nuclear engineering using advanced theoretical methods.

140A—B • Chemical Kinetics of Industrial Processes (3-3) Rinker

Prerequisites: Ch.E. 110A—B; Ch.E. 120A—B—C.

Kinetics of homogeneous and heterogeneous

reacting systems, with and without catalysis and its use in predicting chemical conversion in flow and nonflow reactors. Emphasis is placed on the behavior and design considerations of packed-bed reactors.

150A—B • Chemical Process Dynamics and Control (3-3) Seborg, Mellichamp [B2—150A only]

Prerequisites: Ch.E. 120A—B—C, EE 6A.

Fundamentals of chemical process dynamics and automatic control including servomechanism theory, transfer functions, block diagrams, frequency response, digital and analog computer simulation.

157 • Introduction to Real-Time Computing (4) Mellichamp

Prerequisite: Enrollment subject to departmental approval.

(Students who have earned credit for EE/CS 105A or equivalent will not be permitted to take Ch.E. 157 for credit)

Basic principles of real-time digital information processing with emphasis on the use of computer for data acquisition or feedback control of typical processes.

159A • Real-Time Computing (3) Mellichamp

Prerequisite: Ch.E. 157 or EE/CS 105A or equivalent

A study of system architecture, both hardware and software, required to perform real-time operations. The concepts of parallel or multi-task programming and their application to elementary real-time problems.

159B • Real-Time Digital Computing Applications (3) Mellichamp

Prerequisite: Ch.E. 159A

The application of real-time computing principles to commonly encountered problems such as process data acquisition and control, multi-processor networks, etc. Emphasis on hardware and software modularity and on the optimal allocation of resources.

160 • Polymer Systems (3) Rinker [B2]

Prerequisite: Consent of the instructor.

Treats polymerization from a chemical engineering point of view. Some topics which are considered include polymerization kinetics, polymer rheology, solid-state properties and reactor design for polymerization.

Engineering 170 • Introductory Biomedical Engineering (3) Staff

Prerequisite: Senior standing in engineering or consent of instructor.

Survey of application of engineering principles and methods to problems arising in the life sciences (medicine and biology); analysis of the function and principles of operation of living systems; modeling and simulation of physiological regulatory systems; physiological philosophy of instrument design; etc. (F)

171 • Biochemical Engineering (3) Staff

Prerequisites: Ch.E. 120 or consent of instructor.

An introduction to biochemical engineering covering enzyme and microbial growth kinetics with emphasis on the application of chemical engineering principles to the design and operation of industrial microbial processes.

180A—B • Chemical Engineering Laboratory (3-3) Staff

Prerequisites: Ch.E. 110A—B; Ch.E. 120A—B—C.

Experiments in thermodynamics, fluid mechanics, heat transfer, mass transfer, reactor kinetics and chemical processing. Experimental design, analysis of results, and preparation of reports.

182 • Design and Cost Principles of Chemical Processes (4) Staff

Prerequisites: Ch.E. 110A—B; Ch.E. 120A—B—C; Ch.E. 140A—B.

The use of chemical engineering and cost principles in solving comprehensive problems in the design of a chemical process.

194 • Group Studies for Advanced Students (1-4) Staff

Prerequisite: Consent of instructor.

Group studies intended for small number of advanced students who share an interest in a topic not included in the regular Departmental curriculum. (Check with Dept. for quarters offered.)

*198 • Independent Studies in Chemical Engineering (1-5) Staff

Prerequisite: Consent of instructor.

Individual study, either experimental or theoretical, open to qualified seniors, in chemical engineering

Graduate courses

201 • Research Methods in Chemical Engineering (1) Staff

Prerequisites: B.S. in Chemical Engineering or equivalent.

A discussion of topics from the fields of statistics and instrumentation which are important in chemical engineering research. (S)

210A—B • Advanced Thermodynamics (3-3) Chang

Prerequisite: Consent of instructor.

Advanced topics in thermodynamics including properties of real gases, solutions, phase and chemical equilibria, statistical mechanics, irreversible processes.

220A—B—C • Advanced Transport Processes (3-3-3) Sandall

Prerequisite: Consent of instructor.

A study of the basic laws of momentum, energy and mass transport with emphasis on the prediction of transport rates in chemical engineering applications.

230A—B—C • Advanced Theoretical Methods in Chemical and Nuclear Engineering (3-3-3) Hanna

Prerequisite: Consent of instructor.

Mathematical formulation and solution of problems drawn from the fields of fluid mechanics, heat and mass transfer, thermodynamics, kinetics and reactor design.

240A—B • Advanced Chemical Reactor Design (3-3) Rinker

Prerequisite: Consent of instructor.

See N-2 for 198/199 independent studies unit limitations.

Following a review of the theory of reaction kinetics for catalyzed and non-catalyzed systems, detailed consideration is given to the design and performance of chemical reactors. Mathematical studies of stability and optimization are emphasized in relationship to mass, energy and momentum transport.

250 • Advanced Process Dynamics and Control (3) Mellichamp

Prerequisite: Consent of instructor.

Theoretical and experimental determination of chemical process dynamics, state variable design techniques applied to multivariable systems, analysis of sampled data systems with computer control applications, non-linear system design.

252 • Optimum Control theory (3) Seborg
Prerequisite: Consent of instructor.

The application of recent theoretical developments to the design of optimum control systems. Introduction to stochastic processes, on-line characterization of time-varying processes, design of adaptive systems, optimum control.

Engineering 270A—B—C • Physiological Basis of Biomedical Engineering (3) Horvath
Prerequisite: Engr 170ABC or consent of instructor.

Provides an intensive presentation of the physiology of a single organ system and the application of this knowledge to engineering concepts. Systems covered will vary with student interest. Examples are the cardiovascular, respiratory, renal, endocrine, metabolism or transport system. (F,W,S)

290 • Seminar (1/2) Staff
Research presentations by graduate students. May be repeated for credit.

594 • Special Topics (1-4) Staff
Special seminar on research subjects of current interest.

596 • Directed Reading and Research (2-4) Staff
A written proposal for each tutorial must be approved by the department chairman and filed with the Graduate Division.

598 • Master's Thesis Research and Preparation (0-12) Staff
Only for research underlying the thesis and writing the thesis. Not applicable to course requirement for M.S. degree.

599 • Ph.D. Dissertation Research and Preparation (0-12) Staff
Only for research underlying the dissertation and writing the dissertation.

Nuclear Engineering Lower Division Courses

Engineering 3A—B • Computer Solutions of Engineering and Science Problems (2-2) Staff
Prerequisites: Mathematics 3A—B, concurrently.

Applications of computers to engineering and scientific problems. FORTRAN language programming, elements of numerical analysis, including introduction to error sources, recursion,

numerical calculus, root finding, etc. Students will use the computer.

Available to students in engineering, science and mathematics.

10 • Introduction to Nuclear Energy (3) Staff [B2]

A survey course introducing various aspects of nuclear energy and radiation. Energy demand and resources. Principles of fission and fusion reactors. Basis of radiation protection standards. Environmental effects of nuclear plants, reactor safety and radioactive waste disposal.

Upper Division courses.

Engineering 100 • Engineering Cost-Benefit Analysis (3) Staff
Prerequisite: Upper division standing in engineering or consent of instructor.

Engineering feasibility factors and engineering economic analysis. Analysis of alternatives and estimates of demands and costs in engineering. Probability, uncertainty and risk. Environmental impact analysis. (S)

106 • Thermonuclear Fusion Theory (3) Odette, Gurol
Prerequisite: Consent of instructor.

The course introduces the student to the basic physical principles of plasma confinement. Topics include charged particle motion, hydromagnetic eqs., plasma energy exchange, transport parameters, plasma diagnostics, confinement schemes.

110 • Engineering, Energy and the Environment (4) Staff
Examination of energy resources and utilization; Models of social and economic impact; Technology assessment and environmental impact; Energy systems and fuel cycles; Fossil fuels, nuclear power, advanced alternatives, energy conservation & steady state possibilities. Course will focus on assessing risk-benefit aspects of energy utilization as required in impact statements.

111 • Isotopes and Applied Radiation (3) Profio [B2]
Radioactive and machine sources of radiation. Interactions of radiation with matter. Chemical and biological effects. Detection and dosimetry. Applications of radioisotopes and radiation in medicine, research and industry.

112 • Principles of Nuclear Energy Conversion (3) Odette
Prerequisites: Chemistry 1C, Mathematics 3C.
Thermodynamic principles and laws with emphasis on applications to the problems of nuclear engineering. Relations of macroscopic and microscopic approaches discussed along with some results from statistical mechanics.

115 • Modern Materials Science (3) Odette, Lucas
Prerequisite: Physics 7C.

Principles underlying the mechanical, physical, and chemical behavior of ceramics, polymers and metals. Crystal and defect structure, equilibrium and non-equilibrium phase relations, kinetics, flow fracture oxidation and corrosion.

116 • Nuclear Materials and Radiation Effects (3) Odette, Lucas
Prerequisites: Nuc.E. 115, Physics 116A—B.

Application of fundamental principles of nuclear physics and materials science to nuclear technology. Materials for nuclear applications and radiation effects.

117 • Advanced Topics in Radiation Effects (3) Odette
Prerequisites: N.E. 115, N.E. 116

Advanced topics on radiation damage to metals. Students will perform and report on an individual brief study. Distinguished visitors will supplement faculty lectures. A group state-of-the-art materials design project will be performed using the research results.

118 • Materials in Energy Technologies (3) Odette, Lucas
Prerequisite: N.E. 115

Application of fundamental principles in materials science to selected problems in the technologies of energy production. Emphasis on fracture mechanics, high temperature deformation and corrosion concepts and design bases.

121 • Nuclear Measurements Laboratory (3) Profio [B2]
Nuc.E. 111 recommended.

Nuclear electronics and measurements of nuclear radiations. Topics include: radiation protection and dosimetry, radioactive decay, counting statistics, attenuation and scattering, pulse and denuclear electronics and detectors.

122 • Nuclear Safety and Environmental impact (3) Profio, Fenech [B2]
Nuc.E. 111 recommended.

Radiological safety and environmental impact. Dispersion of radioactivity in the environment. Reactor safety analysis including effects of transients and loss of coolant.

125 • Neutronics Laboratory (4) Profio
Nuc.E. 140A—B recommended.
Measurements of neutronic behavior, investigating neutron diffusion, kinetics, and operation of the L-77 reactor.

130A—B • Nuclear Systems Engineering and Design (3-3) Fenech
Prerequisite: Nuc.E. 144.

Nuclear power cycles. Heat removal and fluid flow in nuclear systems. Power and temperature distribution in core. Thermal stresses and fatigue in components. Nuclear fuel elements design and performance. Flow induced vibrations. Various reactor concepts.

140A—B • Nuclear Systems Theory (3-3) Gurol
Prerequisite: Nuc.E. 144.

The fundamental physical principles underlying the operation of nuclear systems in the framework of the diffusion theory of neutrons.

144 • Theoretical Methods in Reactor Analysis (3) Gurol
Discussion of neutron diffusion in various reactor geometries. Time-dependent treatment of reactors. Multi-group and finite-difference descriptions. Numerical criticality search. Solving nuclear engineering problems via Monte Carlo.

145 • Mathematical Methods in Nuclear Engineering (3) Gurol
Prerequisite: Nuc.E. 144.
Derivation and classification of the time de-

pendent neutron diffusion equation. Analytical methods for the solution of the diffusion equation. The mathematical and physical interpretation of the eigenvalue problem in reactor physics. Numerical techniques for the solution of the diffusion equation with variable coefficients. Inner and outer iterations. Student use of prepared computer modules required.

150 • Nuclear Power Systems Design (4) Fenech

Prerequisite: See instructor.

A team of qualified students work together to design and optimize a specified nuclear power system. Basic principles and up-to-date computer codes are used to demonstrate the interplay between safety-economics-reliability.

160 • Principles of Controlled Thermonuclear Reactors (3) Odette

Prerequisite: Senior standing in engineering or physical sciences or consent of instructor.

Fundamentals of controlled thermonuclear fusion reactor technology. Fusion reactions. Elementary plasma theory. Heating and confinement of thermonuclear plasmas. Vacuum and magnet technology. Conceptual designs of reactors, energy conversion methods, blanket neutronics and tritium breeding. Materials problems.

Engineering 170A • Introductory Biomedical Engineering (3) Staff

Prerequisite: Senior standing in engineering or consent of instructor.

Survey of application of engineering principles and methods to problems arising in the life sciences (medicine and biology); analysis of the function and principles of operation of living systems; modeling and simulation of physiological regulatory systems; physiological philosophy of instrument design; etc. (F)

Engineering 170B—C • Biomedical Engineering (3-3) Staff

Prerequisite: Engr. 170A or consent of instructor.

Detailed investigation of specific biomedical engineering problems; tours of local medical facilities; demonstrations of physiological and medical instrumentation systems. Topics to be determined by progress in various fields of biomedical engineering (V,S)

185 • Materials in Engineering (3) Odette, Lucas

Prerequisites: Upper Division Standing or Consent of Instructor.

Materials science and engineering in the solution of today's complex technological problems. A team of 6 faculty lectures on various aspects of this topic, which emphasize applications of materials, material production techniques, and environmental effects on materials.

194 • Group Studies for Advanced Students (1-4) Staff

Prerequisite: Consent of instructor

Group studies intended for small number of advanced students who share an interest in a topic not included in the regular Departmental curriculum. (Check with Dept. for quarters offered)

***198 • Independent Studies in Nuclear Engineering** (1-5) Staff

*See N-2 for 198/199 unit limitations

Prerequisite: Consent of instructor.

Individual study under a faculty supervisor. This course gives an opportunity to qualified senior students to pursue or initiate some independent experimental or theoretical research.

Graduate courses

217 • Radiation Effects in Structural Materials (4) Lucas, Odette

Prerequisites: N.E. 115, N.E. 116 or equivalent

Review of fields of radiation damage to structural materials used in fission and fusion power systems. Fundamental theoretical basis of radiation damage models, experimental data base and methods of predicting damage to engineering structures are required. Project laboratory.

218 • Nuclear Fuel Materials Engineering (4) Lucas

Prerequisites: N.E. 115, N.E. 116, N.E. 10, N.E. 130A—B or equivalent or Consent of Instructor

Subjects will include the following: 1) nuclear fuel types; 2) properties of fuel and cladding materials; 3) behavior of fuel materials during steady state and abnormal operations; 4) fabrication processes of some selected fuels; 5) fuel design.

220 • Numerical Methods of Nuclear Systems Analysis (3) Gurol

Prerequisites: Engr. 3A—B, Nuc.E. 140A—B.

Numerical methods of solution of nuclear engineering problems. Applications using the available nuclear computer codes developed in industry.

225 • Radiation Shielding and Dosimetry (4) Profio

Prerequisites: Nuc.E. 111, Nuc.E. 145 or equivalent.

Radiation protection standards. Radiation transport analysis. Monte Carlo and discrete ordinates methods. Dosimetry of ionizing radiation.

230 • Nuclear Power Economics (3) Staff

Prerequisites: Nuc.E. 130, Nuc.E. 140 or equivalent.

Actual and future needs for nuclear power. The various components of nuclear power costs. Nuclear fuel cycle costs. Nuclear materials utilization.

235 • Advanced Nuclear Systems Engineering (3) Fenech

Prerequisites: Nuc.E. 130A-B or consent of instructor.

Comprehensive study of phenomena encountered in Nuclear Systems operating at high heat rate. Those include steady and time dependent two-phase-flow heat-transfer, structural response-material stress and lifetime limitations.

240 • Nuclear Reactor Dynamics (3) Gurol

Prerequisites: Nuc.E. 140A-B or consent of instructor.

The neutron physics of reactor kinetics, feedback effects, stability analysis (linear and non linear)

250 • Physical Metallurgy (3) Odette, Lucas
Prerequisite: Graduate standing.

Relationships between structure and properties of metals; thermodynamics of solids-phase transformations; and defect theory; Mechanical behavior-yield, plastic flow, fracture creep and fatigue, strengthening mechanisms; alloy design, composite materials and radiation effects.

260 • Nuclear Power Systems Design (4) Fenech

Prerequisite: Consent of instructor.

A team work design and optimization of nuclear power system using the latest methods of analysis and currently available computer program.

266 • Advanced Fusion Technology (3) Staff
Prerequisites: Nuc.E. 160 or equivalent.

Advance topics in controlled thermonuclear fusion reactor engineering. Magnetic confinement and laser fusion methods. Energy conversion. Materials and design problems. Recent results from fusion research.

270 • Engineering of Advanced Energy Systems (3) Fenech

Prerequisites: Graduate standing or consent of instructor.

A study of the engineering principles and concepts encountered in electrical and mechanical energy production systems using solar energy, geothermal energy, oceans and nuclear and fossils fuels as energy sources. Evaluation of environmental impact of these energy systems.

Engineering 270A—B—C • Physiological Basis of Biomedical Engineering (3) Horvath

Prerequisite: Engr. 170ABC or consent of instructor.

Provides an intensive presentation of the physiology of a single organ system and the application of this knowledge to engineering concepts. Systems covered will vary with student interest. Examples are the cardiovascular, respiratory, renal, endocrine, metabolism or transport system. (F,W,S)

290 • Seminar (1/2) Staff

Presentation of research by outside speakers and graduate students.

594 • Special Topics (1-4) Staff

Special seminar on research subjects of current interest

596 • Directed Reading and Research (2-4) Staff

A written proposal for each tutorial must be approved by the Department Chairman and filed with the Graduate Division.

598 • Master's Thesis Research and Preparation (0-12) Staff

Only for research underlying the thesis and writing the thesis. Not applicable to course requirement for M.S. degree.

599 • Ph.D. Dissertation Research and Preparation (0-12) Staff

Only for research underlying the dissertation and writing the dissertation.

Computer Science

(Engineering)

Professors

- John Bruno, Ph.D., *City University of New York; applications of digital systems to engineering problems, scheduling theory, networks and graphs. (Chairperson)*
- Edward G. Coffman, Jr., Ph.D., *UC Los Angeles; combinatorial sequencing and allocation problems, data structures, mathematical modeling of computer operation.*
- Roger C. Wood, Ph.D., *UC Los Angeles; computer system modeling, design and evaluation; instructional use of computers.*

Assistant Professors

- Laurian M. Chirica, Ph.D., *UC Los Angeles; languages and systems, programming methodology, information systems design.*
- Kenneth J. Klingenstein, Ph.D., *UC Berkeley; formal language theory, systems theory.*
- Richard Kemmerer, Ph.D., *UC Los Angeles; program verification; operating systems; programming languages; software engineering.*
- Arthur B. Pyster, Ph.D., *Ohio State University; translator writing, formal semantics, software engineering, formal languages, programming languages and automata theory.*

Concerns of the Department

The department offers computer science majors leading to the degrees of Bachelor of Arts and Bachelor of Science in Computer Science. The B.S. is a College of Engineering major and the B.A. is a College of Letters and Science major.

Undergraduate education in computer science has a dual purpose: to prepare students for advanced studies and research in computer science and to train students for careers in business, industry and government.

Facilities

Students have ready access to the campus computer center's ITEL AS/6 computer system and a PDP 11/70 computer system. These offer sophisticated time-shared interactive computing, text-editing, word processing and computer graphics. Terminal clusters are located throughout the campus. The Terminal rooms in the Engineering Building include Tektronix 4006 graphics terminals, stand-alone LSI/11-based Terak computer systems and an RJE station. The Computer Science Department, in co-operation with the Department of Electrical Engineering and Computer Engineering (ECE) and the Computer Systems Laboratory (an organized Research Unit), operates

its own VAX 11/780 computer system. A microcomputer-based digital design laboratory is available in ECE.

Advising and Publications

Computer Science students will be kept informed of new courses, requirement changes, and other relevant information through a quarterly newsletter. Also available from the department is *Computer Science at UCSB*, a brochure describing the degree offerings.

The Computer Science office, 2111 Engineering Building, handles all questions about courses, substitutions, requirements, and petitions.

Preparation for the Major

Majors leading to two degrees, the B.A. and the B.S. are available in Computer Science. Preparation for the two degrees is the same. The required courses are listed below.

To be admitted to the major, the student must have completed the preparation with a grade point average of at least 2.5. No course which is required for the preparation may be taken on a P/NP basis. Exceptional cases will be considered by the department.

The Pre-Major

Students intending to major in computer science should declare a Pre-Major before completing the preparation courses listed below. This Pre-Major status will allow them to receive information regarding the major and to take advantage of academic advising; however, pre-major status does not guarantee admission to major status. Students who declare a pre-major will be responsible for satisfying the degree requirements which are in effect at the time of the declaration of the pre-major. When students have completed the preparation courses, they must petition to declare a change of major from the Pre-Major Computer Science to Computer Science. This can be done at the Department of Computer Science office, 2111 Engineering Building.

Requirements in Preparation for the Major

Courses identified as options within the preparation are considered equivalent. Students may take either of the courses to satisfy the requirement, but may not take both for credit.

1. Mathematics 3ABC or 7ABC or appropriate portions of 3S (Calculus)
2. Mathematics 5A (Differential Equations)
3. Computer Science 10 (Introduction to Computer Programming)

4. Computer Science 20 (Introduction to Computer Science)
5. Computer Science 30 (Introduction to Computer Systems)
6. Mathematics 9 or 108A (Linear Algebra)
7. Mathematics 31AB (Discrete Mathematics)
8. Probability/Statistics 107 (Discrete Probability)

Upon satisfactory completion of the preparation courses, the student should complete a change of major petition, available in the Department of Computer Science office, 2111 Engineering Building, and obtain the appropriate signatures. At this time, the student must declare a B.A. or B.S. degree.

Courses required for the major, lower division or upper division, in or outside of the Department of Computer Science, *cannot* be taken on a Passed/Not passed grading option. They must be taken for letter grades.

Bachelor of Science (College of Engineering)

Upper Division Major: the following courses are required:

- Computer Science 130AB (Data Structures & Algorithms)
- Computer Science 110 (Numerical Computation)
- Computer Science 120A (Automata and Formal Languages)
- Computer Science 120B (Theory of Computation)
- Electrical Engineering 152A (Logic Design & Components of Digital Systems)
- Computer Science 154 (Computer Architecture)
- Computer Science 162 (Programming Languages)
- Computer Science 160 (Translation of Programming Languages)
- Computer Science 170 (Operating Systems)
- Probability/Statistics 121A (Probability/Statistics for Computer Science)

Major Field Electives: at least 16 units of electives are required. The purpose of the major field electives is to supplement the major requirements according to the individual student's technical interest. Prior approval of the major field electives must be obtained from the student's advisor.

Science, Mathematics and Engineering Electives: at least 20 units are required. The purpose of these electives is to assure breadth in science. Courses required for the Computer Science Preparation and Upper Division Major may not be used to satisfy this requirement. Prior approval of the science, mathematics and engineering electives must be obtained from the student's advisor.

Bachelor of Arts (College of Letters and Science)

Upper Division Major: the following courses are required:

- Computer Science 130AB (Data Structures & Algorithms)

- Computer Science 110 (Numerical Computation)
- Computer Science 120A (Automata and Formal Languages)
- Computer Science 120B (Theory of Computation)
- Electrical Engineering 152A (Logic Design & Components of Digital Systems)
- Computer Science 154 (Computer Architecture)
- Computer Science 160 (Translation of Programming Languages)
- Computer Science 170 (Operating Systems)
- Probability/Statistics 121A (Probability & Statistics for Computer Science)

Upper Division Electives: at least 8 units are required. Prior approval of the major field electives must be obtained from the student's advisor.

Graduate Studies in Computer Science

Computer Science tracks leading to the degree Master of Science in Electrical Engineering and the degree Doctor of Philosophy in Electrical Engineering are available. Interested students should consult the section of this catalog under The Department of Electrical and Computer Engineering.

Career Opportunities

Computer science offers a variety of challenging and rewarding careers. Some important areas are:

Scientific applications: the design and preparation of programs in support of scientific and engineering applications.

Management information systems: large organization of all types (business, government, academic, etc.) make extensive and sophisticated use of computer systems in data processing, operations analysis, management information, record keeping, customer services, and even internal communications.

Systems programming: design, evaluation, and maintenance of computer operating systems, compilers and related software.

Continuing improvement in computer hardware and programming technique is now opening up many new areas of applications and research; real time signal processing, hospital services, computer control of manufacturing processes, computer aided instruction, etc.

Computer Design: progress in hardware components such as integrated circuits generates a continuing need for new computer designs and architectures. Integration of hardware and software aspects of new systems requires people with broad-based training in both areas.

Correspondence Information

Information concerning advising and other aspects of computer science at UCSB may be obtained from The Department of Computer Science, 2111 Engineering Building, University of California, Santa Barbara, California 93106, Phone (805) 961-4321.

Lower Division Courses

5 • Introduction to Computer Programming and Organization (4), F/W/S/SS, Staff [B2]

Prerequisites: None. Not open to students who have had Computer Science 10, or Engr 3A,B, or MATH 6A, or ECE 5

Introduction to programming and the organization of computers. Basic programming concepts: algorithms, data and control structures, debugging, program design, documentation, structured programming. For the non Computer Science major

10 • Introduction to Computer Programming (4), F/W/S, Staff [B2]

Prerequisites: Math 3A or Math 7A.

Introduction to programming and the organization of computers. Basic programming concepts: algorithms, data and control structures, debugging, program design, documentation, structures programming. For Computer Science Majors

11AA—ZZ • Programming Language Laboratory (1) F/W/S, Staff

Prerequisites: working knowledge of at least one programming language.

A self-paced course to allow a student who already possesses a working knowledge of at least one programming language an opportunity to learn other languages of interest. Each section studies a different language. Sections are:
CMPSC 11PA - PASCAL CMPSC 11FO - FORTRAN
CMPSC 11AP - APL CMPSC 11CO - COBOL
CMPSC 11SN - SNOBOL CMPSC 11C - C
CMPSC 11LI - LISP

20 • Introduction to Computer Science (4), F/W/S, Staff [B2]

Prerequisites: Computer Science 10, Math 3B or Math 7B. Not open for credit to students who have received credit for EE/CS 3.

Advanced programming techniques: list processing, recursion, string processing, backtracking, exception handling, macros, concurrent processing, simulation. Advanced language concepts: block-structure, pointers, synchronization variables, records, sets, programmer-defined types.

30 • Introduction to Computer Systems (4), F/W/S, Staff [B2]

Prerequisites: Computer Science 10. Not open for credit to students who have received credit for 15A.

Digital logic circuits and integrated circuits; register transfer and micro-operators; basic computer organization; assembly language programming; input-output programming, interrupt handlers.

40 • Introduction to Systems Programming (4) W Staff [B2]

Prerequisites: Computer Science 30.

Machine architecture, machine language, assemblers, macro processors, loaders, linkers, operating systems.

Upper Division Courses

110 • Numerical Computation (4), F/W, Staff [B2]

Prerequisites: Math 5A, Math 9 or Math 108B; and Computer Science 20.

Study of computer programs for problems involving matrices, integrals, differential equation, spline functions, zeros and extrema of functions, least squares and Monte Carlo techniques

120A • Automata and Formal Languages (4) W, Staff [B2]

Prerequisites: Computer Science 10 and Math 31AB. Not open for credit to students who have received credit for Math 150.

Languages and acceptors, Chomsky's hierarchy. Regular sets, regular grammars, finite automata, regular expressions, Kleene's theorem, minimization and equivalence, Nerode's characterization, nondeterministic finite automata. Context-free languages and grammars, push-down automata, determinism, ambiguity, decision problems, closure results. Context-sensitive languages and grammars, linear bounded automata. Recursive, recursively enumerable sets.

120B • Theory of Computation (4), S, Staff [B2]

Prerequisites: Computer Science 120A. Not open for credit to students who have received credit for Math 151.

Recursive functions, Turing computability, Markov algorithms, lambda calculus, Church's thesis. Predicate calculus, satisfiability, truth, models, normal forms, first-order theories, natural deduction, completeness theorems, resolution principle, automatic theorem proving, Program schemas, interpretations, principal classes of flow chart schemas and their relation to automata, unsolvability of basic properties, recursive schemas, least fixpoint theory, partial and total correctness.

130 A-B • Data Structures and Algorithms (4, 4), F/W, Staff [B2]

Prerequisites: Computer Science 20, Computer Science 30, Math 31AB, and PSTAT 107.

Design and analysis of basic non-numerical algorithms. Emphasis on structured design of algorithms, correctness proofs, and analysis of time and space requirements. Topics include: Representation and manipulation of basic data structures such as stacks, queues, trees, arrays, etc.; balanced trees; graph algorithms, such as minimum spanning tree, depth-first search, connectivity, shortest paths.

130C • Algorithms for Graph and Networks Problems (4) Staff [B2]

Prerequisites: Computer Science 130AB. Not open for credit to students who have received credit for EE/CS 169, or Computer Science 132.

Algorithms for the solution of various graph and network problems. Topics include: flows in networks, minimum cost flows, multiterminal networks, matching, network connectivity, planarity testing, combinational optimization.

154 • Computer Architecture (4), S, Staff [B2]

Prerequisites: Computer Science 130AB and

Electrical and Computer Engineering 152A. Not open for credit to students who have received credit for ECE 154

Introduction to the architecture of computer systems. Topics include: central processing units, memory systems, channels and controllers, peripheral devices, interrupt systems, software vs. hardware tradeoffs.

160 • Translation of Programming Languages (4), F/S, Staff [B2]

Prerequisites: Computer Science 120A and 130AB.

Structure of translators, assemblers, interpreters and compilers; scanner, LL parsers, code generation, error processing, diagnostic tools, monitors.

162 • Programming Languages (4), W/S, Staff [B2]

Prerequisites: Computer Science 120 and 130AB.

Basic concepts of programming languages: binding, type-checking, storage management, scope of names, extensibility, macro processing, syntax, semantics, pragmatics; analysis and evaluation of programming languages from data- and control-structure points of view.

170 • Operating Systems (4), F/S, Staff [B2]

Prerequisites: Computer Science 130A. Not open for credit to students who have received credit for EE/CS 173.

Basic concepts of operating systems. The notion of a process; inter-process communication and synchronization; input-output, file systems, linking and loading.

172 • Software Laboratory (4), F, Staff [B2]

Prerequisites: Computer Science 130.

Development of medium-scale software system using current methodologies of software engineering. Students will work in teams stepping through the software life-cycle from requirements to maintenance.

174 • Data Base Management Systems (4), F/W, Staff [B2]

Prerequisites: Computer Science 130B, 170. Not open for credit to students who have received credit for EE/CS 168.

Data base systems architecture; network, hierarchical and relational systems; data base languages; data base operational requirements.

190 • Special Topics in Computer Science (1-5), Staff

192 • Projects in Computer Science (4), Staff

194 • Group Studies in Computer Science (1-5), Staff

199 • Independent Studies in Computer Science (1-5), Staff

Electrical and Computer Engineering

Professors

John A. Baldwin, Jr., Ph.D., *UC Berkeley*; *ferromagnetism, ferromagnetic materials and devices, electromagnetic field theory.*

†John L. Bruno, Ph.D., *City University of New York*; *applications of digital systems to engineering problems; scheduling theory; networks and graphs.*

†Edward G. Coffman, Jr., Ph.D., *UC Los Angeles*; *combinatorial sequencing and allocation problems, data structures, mathematical models of computer operation.*

Jorge R. Fontana, Ph.D., *Stanford University*; *quantum electronics, atmospheric pollution monitoring, underwater acoustic devices.*

Steven M. Horvath, Ph.D., *Harvard University*; *biomedical engineering, environmental stress, physiology.*

Kenneth L. Kotzebue, Ph.D., *Stanford University*; *microwave solid-state devices and circuits, with emphasis on optimum device/circuit interaction. (Vice Chairperson)*

Herbert Kroemer, Dr. rer. nat., *University of Goettingen*; *general solid-state and device physics and technology; heterojunctions; molecular beam epitaxy.*

George L. Matthaei, Ph.D., *Stanford University*; *acoustic-wave devices for electric signal processing, microwave devices, and network theory.*

James L. Merz, Ph.D., *Harvard University*; *optical properties of compound semiconductors; defects in solids; ion implantation and laser annealing; integrated optics.*

Sanjit K. Mitra, Ph.D., *UC Berkeley*; *active and passive network theory and design, one- and two-dimensional digital signal processing, computer-aided design and optimization (chairperson).*

Philip F. Ordung, D. Eng., *Yale University*; *solid-state and network theory, solid-state device fabrication, photovoltaic solar cells and charge-coupled devices.*

Ian B. Rhodes, Ph.D., *Stanford University*; *system theory and its applications, with emphasis on stochastic control, communication and optimization problems.*

John G. Skalnik, D. Eng., *Yale University*; *solid-state and active devices.*

^{1 2 3}Edwin B. Stear, Ph.D., *UC Los Angeles*; *numerical search algorithms and optimal control, optimal estimation and filtering, biological systems theory and modeling, computer analysis of brain waves.*

^{1 2 3}Glen Wade, Ph.D., *Stanford University*; *optical and acoustical systems theory and experiment; emphasis on acoustical imaging; computer processing and enhancement of images.*

^{1 2}†Roger C. Wood, Ph.D., *UC Los Angeles*; *computer system modeling, design and evaluation; instructional use of computers.*

Associate Professors

Glenn R. Heidbreder, D. Eng., *Yale University*; *communication theory, signal processing in radar and digital communication systems, digital image processing.*

James A. Howard, Ph.D., *UC Los Angeles*; *digital system design, mini/micro-computer applications and design methodologies, real-time computing, instructional use of computers.*

Assistant Professors

†Laurian M. Chirica, Ph.D., *UC Los Angeles*; *programming languages and systems, programming methodology, information systems design.*

†Arthur B. Pyster, Ph.D., *Ohio State University*; *translator writing, formal semantics, software engineering, formal languages, programming languages and automata theory.*

Visiting Professors

Brian D. O. Anderson, Ph.D., *Stanford University*; *system theory and its applications.*

Adir Bar-Lev, D.Sc., *Technion-Israel Institute of Technology*; *microelectronics, semiconductor devices, circuits, network theory, and high power.*

Professors Emeriti

A.G. Conrad, E.E., *Yale.*

Concerns of the Department

The Department of Electrical and Computer Engineering offers a wide range of both undergraduate and graduate studies in electrical and computer engineering and graduate studies in computer science. In addition, interdisciplinary studies between computer science and electrical and computer engineering are available at both the undergraduate and graduate levels.

The undergraduate major in electrical and computer engineering pursues a planned program of studies which provides both a sound background in those fundamental mathematical and physical principles on which modern electrical and computer engineering are based, and a high level of advanced education in selected areas of specialization. This program of studies leads to a Bachelor of Science degree, and it fully prepares the student for either professional employment or for graduate studies.

¹Absent on Leave Fall 1980

²Absent on Leave Winter 1981

³Absent on Leave Spring 1981

†Joint appointment with Dept. of Computer Science

The first two years of undergraduate studies are devoted to the study of mathematics, physics, chemistry, problem solving using computers, a number of elective courses in humanities and general education subjects, and a general introduction to electrical and computer engineering. The junior year consists largely of required fundamental courses in electrical and computer engineering which provide necessary breadth in the student's education at an advanced undergraduate level. Finally, the senior year consists totally of elective courses which are selected by the student with help and approval of the Department's Undergraduate Adviser. The elective course selection is normally concentrated in certain areas of specialization which provide the depth of education required for successful professional work and/or graduate studies.

In addition to formal classroom lectures and studies, the Faculty of the Department places strong emphasis on the inclusion of significant and meaningful laboratory and computational experience in the student's program of study. To support this additional enriching experience, the Department and the Campus have developed and maintain an extensive complement of relevant laboratory and computational facilities.

The Department's undergraduate program is fully accredited by the Engineers' Council for Professional Development.

Graduate majors in the ECE Department may pursue programs of study in either computer science or electrical and computer engineering at either the Master of Science degree (M.S.) or the Doctor of Philosophy degree (Ph.D.) levels. Programs of study at the M.S. degree level serve to extend and sharpen the student's professional skills considerably beyond the level obtainable at the Baccalaureate level, while programs of study at the Ph.D. degree level prepare the student for careers in teaching and/or advanced development and research. At both the M.S. and Ph.D. levels, emphasis is placed on the planned inclusion of breadth in the general area of study and depth in a specialty area in each student's overall program of study. Graduate studies in electrical and computer engineering are offered in four major areas of emphasis designated as Computer Engineering; Microwaves, Optics and Acoustics; Solid State; and Signals and Systems. Graduate studies in computer science are offered in major areas of emphasis designated as Foundations of Computer Science, Algorithms and Complexity, Operating Systems, Data Base Management Systems, Languages and Translation.

In addition, the Department now offers five-course Certificate Programs for those with a B.S. degree or higher who wish to advance their knowledge in a specific area or undertake a new area. Approved programs are in the following areas: Circuits and Signal Processing; Controls and Communication Systems; Computer Engineering; Microwaves, Optics and Acoustics; Solid State.

Departmental Advising and Publications

Undergraduate counseling is provided by the Assistant to the Dean for Undergraduate Studies, College of Engineering, University of California, Santa Barbara, California 93106. During the latter part of the junior year, the ECE Undergraduate Adviser works in conjunction with the Assistant to the Dean in helping students choose their senior elective courses.

At the Graduate level, there are three academic advisers appointed by the Dean of the Graduate Division to oversee the areas of Electrical and Computer Engineering, Computer Science, and the Off-Campus Program televised to Vandenberg Air Force Base and Pt. Mugu. Individual faculty members are also available for help in academic planning.

The Department publishes several posters and brochures during the year advertising the various programs offered. In addition, there are several intradepartmental handbooks available to students, concerning financial aid, TA training, examination requirements, etc.

Undergraduate studies in Electrical and Computer Engineering - the Bachelor of Science degree

Undergraduate studies in the ECE Department lead to a Bachelor of Science degree in electrical and computer engineering. The student may emphasize either electrical engineering or computer engineering or both. In order to graduate with a Bachelor of Science degree, all undergraduate majors in the Department are required to meet a set of minimum unit and grade point requirements and a set of General Education requirements which are common to all undergraduate majors in the College of Engineering. These College of Engineering requirements are described in Section H of this catalog. In addition, all majors must plan their individual programs of study so as to meet a set of specific additional Departmental requirements for the major as described below. These additional requirements consist of: (1) a set of required lower-division courses which serve as preparation for the major, and (2) a set of required and elective upper-division courses which serves to define the academic content of the major.

Preparation for the major

The required preparation for the major consists of the following lower-division courses (or their equivalents if taken elsewhere).

- Engineering 3A-B, Computer Solutions of Engineering & Science Problems
- ECE 2A-B-C, Circuits, Devices and Systems
- Chemistry 1A-B-C, General Chemistry
- Chemistry 1AL-BL-CL, General Chemistry Laboratory
- Math 3A-B-C, Calculus with Applications
- Math 5A, Applied Differential Equations
- Math 5B-C, Advanced Calculus with Applications
- ME 10, Introduction to Engineering Mechanics
- Physics 7A-B-C, Physics for Engineers
- Physics 7BL-CL, Experimental Physics for Engineers

Upper-Division coursework Requirements for the major

The upper-division course work requirements for the major consist of a set of required courses plus a minimum of 24 units of additional Departmental elective courses which are selected from a wide variety of specialized courses offered by the Department in various areas of electrical and computer engineering.

The required upper-division courses for the major are:

- ECE 130A-B, Signal Analysis and Processing
- ECE 134, Introductory Field Theory
- ECE 136A, Electronics, and either ECE 136B, Electronics, or ECE 136C, Digital Electronics
- ECE 139A-B, Network Theory
- ME 105, Introduction to Statistical Thermodynamics

The required minimum of 24 units of Departmental elective courses are taken primarily in the senior year, and they permit students to develop the required depth in specialty areas of their choice in either electrical engineering or computer engineering or both. Depth is achieved through selection of a coherent series of two or three courses in each specialty area selected for study by the student. There is a great deal of freedom in selection among the many upper-division elective courses and course sequences offered by the Department, and students are encouraged to plan their programs of elective courses so as to best fit their own special interests within the constraint of obtaining the depth of education required for effective professional practice and/or graduate studies.

Certain sequences of courses complement one another in very natural and effective ways. Such complementary sequences can be used by the student to form an overall upper-division elective course program of real strength and value in a broader context than that offered by any particular course sequence. Some examples of such "elective course programs" are given below for illustrative purposes.

Program in Solid-State and Quantum Electronics

Fall:	ECE 160B	ECE 145A	ECE 140
Winter:	ECE 160C	ECE145B	ECE 144A
Spring:	ECE 160A		ECE 144B

Other suggested courses: Math 108A-B, 122A-B; Physics 115A-B-C; 123A-B.

Program in Microwaves and Communications Electronics

Fall:	ECE 140	ECE 145A	ECE 149
Winter:	ECE 144A	ECE 145B	ECE 146A-AL
Spring:	ECE 144B	ECE 145C-CL	ECE 146B-BL

Other suggested courses: Math 108A-B, 122A-B.

Program in Signals and Systems

Fall:	ECE 140	ECE 149	ECE 147A-AL
Winter:	ECE 146A-AL	ECE 158	ECE 147B-BL
Spring:	ECE 146B-BL	ECE 178	

Other suggested courses: Math 108A-B, 118A-B-C, 122A-B; ECE 148

Program in Computer Engineering

Fall:	ECE 152A	ECE 154	CMPSC 130A
Winter:	ECE 152B		CMPSC 162
Spring:	ECE 152C	ECE 150	CMPSC 170

Other suggested courses: Math 104A-B-C, 108A-B, 110, 136A-B-C, ECE 151.

More than 24 units of courses are listed in each of these illustrative examples of elective course programs in order to indicate the degree of flexibility available within each example program. Also, students are encouraged to use some of their 26 free elective units to strengthen their elective programs by completing elective programs such as those listed above and/or taking some of the other suggested courses listed.

The student's Departmental elective course programs must be approved by the Department's Undergraduate Adviser.

Graduate Programs in Electrical and Computer Engineering

Admission Requirements and Prerequisites

The Department offers graduate study programs at the Certificate, M.S. and Ph.D. levels in both electrical engineering and computer engineering. These graduate programs are open to those who have a Bachelor's degree in electrical and computer engineering, in computer science, in other areas of engineering, or in mathematics, physics, or other related fields of science. A Bachelor's degree in fields other than electrical and computer engineering or computer science is accepted for graduate admission provided that the applicant has adequate formal training in certain fundamental subject areas and is prepared to take a number of remedial undergraduate prerequisite courses which may not be used for credit toward their graduate degrees. These fundamental subject areas include mathematics through differential equations and advanced calculus, a full year of physics at the college level, and introductory programming.

In addition to an acceptable Bachelor's degree, all applicants for admission to graduate status in electrical and computer engineering are required to present concrete evidence of a high level of technical skills, scholarship, and aptitude for electrical and computer engineering. This evidence is normally provided through a combination of the following: undergraduate transcripts; Graduate Record Exam (GRE) scores, including scores on the verbal, quantitative, and advanced parts of the exam; letters of recommendation from former college teachers and/or employers in the student's profession; and accounts of past professional experience. Applicants are required to submit GRE scores for both the verbal and quantitative portions

of the exam. The advanced portion of the GRE exam is optional. TOEFL scores (English language proficiency test) are required of all foreign students.

In addition to the above general requirements for admission to graduate studies in the Department, admission to the Ph.D. program is restricted to those who already hold the Master's degree or its equivalent in either computer science or electrical and computer engineering or related fields and who demonstrate exceptional ability and promise for further graduate study.

The Certificate Program

For completion of the Certificate Program, the student is required to take and pass five courses, with at least a 3.0 GPA. At least three of these courses must be at the graduate level. Courses specifically required of undergraduate ECE majors cannot be included for credit in the Certificate Program. The student is required to complete the course requirements for a certificate in three years from the date of admission to the program. All courses must be taken for a letter grade. Eligible courses within each of the five approved programs are listed below. Students seeking to use courses not listed in this section must secure the approval of the Departmental Graduate Adviser before beginning their program.

Courses eligible for a certificate in Circuits and Signal Processing: ECE 130C, ECE 140, ECE 145A,B,C, ECE 147B, ECE 149, ECE 158, ECE 169, ECE 150, ECE 152A,B,C, ECE 178, ECE 237, ECE 238A,B, ECE 271A,B, ECE 258, ECE 259, ECE 278, ECE 201D, ECE 202A, ECE 202B.

Courses eligible for a certificate in Control and Communication Systems, Bioengineering: ECE 140, ECE 145B, ECE 146A,B, ECE 147A,B, ECE 148, ECE 149, ECE 150, ECE 152A,B,C, ECE 158, Engr 170, ECE 205A, ECE 240 A,B, ECE 247A,B,C, ECE 269, Engr 270A,B,C, ECE 271A,B, ECE 258, MEE 271A,B, ERGONOMICS 207

Courses eligible for a certificate in Computer Engineering: ECE 150, ECE 151, ECE 158, ECE 169, ECE 152A,B,C, ECE 154, ECE 203, ECE 250, ECE 251, ECE 252A,B,C, ECE 256, ECE 257, ECE 258, ECE 269, ECE 277A, ECE 277B, ECE 279, CMPSC 130A, CMPSC 162, CMPSC 170, CMPSC 272A,B, ECE 276, CMPSC 278 Courses eligible for a certificate in Microwaves, Optics and Acoustics: ECE 144A,B, ECE 160A, ECE 145B,C, ECE 201A,B,C,D, ECE 202A,B, ECE 208A,B,C, ECE 211A,B,C, ECE 260A,B, Phys 141, Phys 253, ECE 271A,B

Courses eligible for certificate in Solid State: ECE 151, ECE 160B,C, ECE 161A,B, ECE 211A,B,C, ECE 220A,B,C, ECE 227, ECE 228, ECE 253, ECE 254, ECE 255, MEE 159 Phys 123A,B, ECE 260A,B.

The Master of Science Degree Requirements

Graduate studies toward the Master of Science degree in Electrical and Computer Engineering are administered under either Plan I, which requires course work and a thesis, or Plan II, which requires course work and a comprehensive examination. Under either plan, the student is required to complete at least 42 units of course work which

is approved by the student's Faculty Adviser and the Departmental Graduate Adviser. Under Plan I the student is required as part of the overall 42 unit requirement, to (1) complete eight courses, of which no more than three can be at the undergraduate level, and to (2) submit an acceptable thesis based on research carried out under at least eight units of ECE 598 and approved by a Thesis Committee composed of at least three faculty members. The eight course requirement shall not include more than the equivalent of two courses (eight units) of ECE 596, independent study courses, or of courses taken without a letter grade. Of the eight required courses, at least five must be taken in Electrical and Computer Engineering. Upper division courses which are required for the undergraduate ECE major at UCSB cannot be used to fulfill the course work requirements. Plan I is recommended for those M.S. students who plan to continue graduate studies toward the Ph.D. degree.

Under Plan II the student is required as part of the overall 42 unit requirement, to (1) complete at least ten courses of which no more than four can be at the undergraduate level, and (2) pass a comprehensive examination administered by a committee of three faculty members. The ten course requirement shall not include more than the equivalent of two courses (8 units) of ECE 596, independent study courses, and courses taken without a letter grade. Of the ten required courses, at least seven must be in Electrical and Computer Engineering or in Computer Science. Upper-division courses required for the undergraduate ECE major at UCSB cannot be used to fulfill the course work requirements. *Study plans that do not satisfy the above requirements must be approved in advance by petition.*

Under either plan, M.S. degree students must select a program of courses which forms a coherent pattern directed toward some definite educational objective. This course program must include both depth in a particular area of emphasis within the Department's course offerings and breadth through other course offerings in the Department or other Departments which are related to but distinct from the student's selected specialty area. Immediately upon beginning graduate study, the student must develop a formal study plan with the help of a Faculty Adviser and must obtain both his Faculty Adviser's and the Department Graduate Adviser's approval of this plan. If desired or necessary during the course of his graduate studies, the student may propose alterations to the original study plan in consultation with and approval of both his Faculty Adviser and the Graduate Adviser.

Master's students who select the field of electrical and computer engineering for their graduate studies must plan their program of study around one of the four areas of graduate emphasis in electrical and computer engineering offered by the Department. These areas include Computer Engineering; Microwaves, Optics and Acoustics; Solid-State; and Signals and Systems.

The Doctor of Philosophy Degree Requirements

There are no foreign language requirements in this program. Immediately upon admission to studies toward the

Ph.D. degree in the Department of Electrical and Computer Engineering, students are required to develop a formal study plan which includes both (1) an appropriate level of course work and special studies to provide depth of knowledge in a specialty area and (2) additional course work in two additional technical areas which are distinct from his specialty area to provide sufficient breadth of education. This study plan must be approved by the student's Faculty Adviser and the official Graduate Adviser for the Department. The study plan may be modified during the course of a student's program to reflect changes in a student's emphasis providing the changes are approved by both the student's Faculty Adviser and the official Graduate Adviser for the Department. Seventy-two units of graduate work beyond the Bachelor's degree or equivalent self-study is normally considered sufficient to meet both the depth and breadth requirements for the Ph.D. degree, although this number may vary from person to person depending upon background.

Departmental Ph.D. Screening Examination-General Information

The purpose of the examination is to screen candidates for continuation in the program. The screening Examination is not required for admission to the Ph.D. program; however, all students in the Ph.D. program are required to pass the examination. There is a Graduate Examination Committee of ECE faculty members which administers the examination. The examination is given once a year, at the beginning of the Winter Quarter. To remain in the Ph.D. program, the student must have taken the examination the first or second time it is offered, but no later than during the fifth academic quarter of residence in the Ph.D. program. If the student fails the examination on the first attempt, he or she must pass it the next time it is offered.

Once the student has passed the Preliminary Screening Examination and has satisfied the University's residency requirements (see the Graduate Division Announcement) a formal Ph.D. Committee is formed on the student's initiative. This Ph.D. Committee administers the Oral Qualifying Examination at such time as the Ph.D. Committee deems the student to be adequately prepared. After passing the oral qualifying examination, the student is eligible for advancement to candidacy for the Ph.D. degree.

After passing the oral qualifying examination, the student must prepare a dissertation based on the student's original research in a subject area approved by his Ph.D. Committee. This dissertation must then be defended in an open oral Dissertation Defense Examination which is conducted by his Ph.D. Committee and which is open to all interested individuals who desire to attend and participate. After successfully defending his or her dissertation, the student is awarded the Ph.D. degree.

Graduate programs in Computer Science

In addition to graduate studies in electrical and computer engineering, the Department also offers graduate programs at the M.S. and Ph.D. levels in Computer Science.

In order to be admitted to graduate study in computer

science, applicants must fulfill the general scholarship requirements for graduate study noted earlier and should hold a Bachelor's degree or its equivalent in Computer Science, Computer Engineering, Electrical Engineering, Mathematics, or some other scientific discipline. Undergraduate preparation must include the following topics in computer science and mathematics:

- Introductory Computer Architecture and Programming
- Data Structures and Algorithms
- Automata, Formal Languages and Theory of Computation
- Mathematics background which includes calculus, linear algebra, elementary probability and discrete mathematics.

Students admitted to graduate standing with deficiencies in preparation will be required to take appropriate remedial undergraduate courses. The following courses are available to be used to meet deficiencies in undergraduate preparation of graduate students. Some of these courses may be applied towards satisfaction of the unit requirements for graduate degrees.

CMPSC 110	Numerical Computation
CMPSC 120A	Automata and Formal Languages
CMPSC 120B	Theory of Computation
CMPSC 130A,B	Data Structures and Algorithms
CMPSC 160A	Translation of Programming Languages
CMPSC 162	Programming Languages
CMPSC 170	Operating Systems
CMPSC 154	Computer Architecture
ECE 152A	Logic Design and Switching Theory
MATH 107	Discrete Probability Theory
Math 121A	Probability and Statistics for Computer Science

Graduate Record Examination scores in quantitative and verbal aptitude are required for admission. TOEFL scores (English language aptitude test) are required of all foreign student applicants.

Study plan

Each student, in consultation with a faculty advisor, must prepare a **Study Plan** which satisfies all of the undergraduate deficiencies and which is designed to achieve an appropriate breadth in computer science. All Study Plans must be approved by the Department's Computer Science Graduate Adviser.

The Master of Science Degree Requirements

Graduate studies toward the Master of Science degree with emphasis in Computer Science are administered under either Plan I, which requires course work and a thesis, or Plan II, which requires course work and a comprehensive examination. Under Plan I the student must complete

at least 42 units of course work which is approved by the student's Thesis Adviser and the Department's Computer Science Graduate Adviser, and a thesis. These 42 units shall include at least eight courses of which at least five are graduate level (200 series) courses. The remaining courses can be chosen from approved upper division courses in Computer Science or other approved areas. The candidate must submit an acceptable thesis, completed under the supervision of a faculty member, and approved by a thesis committee composed of three faculty members. Plan I is most appropriate for those graduate students who intend to further pursue their graduate studies at the Ph.D. level.

Under Plan II the student is required to complete 42 units of course work which is approved by the Department's Computer Science Graduate Adviser, and the passing of a comprehensive final examination. These 42 units shall include at least ten courses of which at least six are graduate level (200 series) courses. The remaining courses can be chosen from approved upper division courses in Computer Science or other approved areas. The comprehensive examination (written and/or oral) is based upon core computer science material and the student's course work.

The Doctor of Philosophy Degree Requirements

Students in the Ph.D. program with emphasis in computer science are required to submit for approval by the student's Faculty Adviser and the Department's Computer Science Graduate Adviser, a program of study covering course work and special studies which will provide depth of knowledge in a desired field of study (major field), and breadth of knowledge in two other areas (minor fields) distinct from but supportive of his/her specialty area. While there is no formal unit requirement for the Ph.D., ninety-six units of graduate work is normally considered sufficient to meet the breadth and depth requirements for the Ph.D.

Examinations. The following examinations are required for the Ph.D. degree in computer science:

(a) Preliminary Screening Examination. This examination covers computer science and mathematics core material. Students are required to take this examination as early as possible in their program. The purpose of the examination is to screen potential Ph.D. candidates for continuation in the program.

(b) Major Field Examination. The purpose of this examination is to determine whether the student is obtaining sufficiently broad and thorough knowledge in his/her specialty area to begin his/her dissertation research. This examination is given by the Doctoral Committee and must contain an oral portion, but may include a written portion as well. This examination must be taken soon after the completion of the student's major field studies.

(c) Minor Field Requirements. The student can satisfy the minor field requirements either by course work (with a GPA of at least 3.33), or by examination.

(d) Oral Qualifying Examination. This is an oral examination to assure that the student has completed all requirements and is prepared to undertake his/her proposed research program for the doctoral dissertation.

(e) Final Examination. This is a final oral examination given on the dissertation and its implications.

There are no foreign language requirements in this program.

It is understood that in addition to the above requirements, students must satisfy all requirements set down by the Graduate Division.

Teaching credentials

Students who complete a major in Electrical and Computer Engineering may be eligible to pursue a California teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180 Phelps Hall.

Career opportunities

The undergraduate major in electrical and computer engineering prepares students for a wide range of positions at a beginning professional level in business and in government, and private industrial research, development and manufacturing organizations. It teaches a disciplined, logical and practical approach to problem solving which has wide application outside the technical framework in which it is presented; hence, it often serves as an educational foundation for diverse professional fields.

The M.S. program provides postgraduate professional education leading to increased career opportunities in the above positions. The Ph.D. program offers educational opportunities at an advanced level leading to careers in research and teaching, and to positions of professional leadership.

Laboratory and computational facilities

The Department of Electrical and Computer Engineering maintains a wide variety of very well-equipped laboratory facilities in support of its many instructional and research programs. These laboratories range from specialized lower-division teaching laboratories to graduate teaching and research laboratories.

At the undergraduate level, all courses for which laboratory and/or computational experience is appropriate have strong laboratory and/or computational components which are an integral part of the courses and which represent one of the strong features of the Department's undergraduate program. Lower-division and junior-level courses are typically supported by general undergraduate teaching laboratories and by the computational facilities of the Department and the Computer Center which will be described later.

Senior elective courses and graduate courses are typically supported by individualized laboratories and specialized computing facilities, as well as the general-purpose computational facilities of the Department and the Computer Center. Many of these individualized, discipline-oriented laboratories and specialized computing facilities are also used to support a wide variety of research

programs in the Department. A brief description of the major teaching and research laboratories in the Department is given below.

The general undergraduate teaching laboratories

The Department maintains a set of laboratories referred to as the General Undergraduate Teaching Laboratories. These laboratories are of a general purpose nature, and are devoted specifically to undergraduate teaching at the lower-division and junior levels. Typically they include various standard sets of laboratory instrumentation including oscilloscopes, multimeters, function generators, power supplies, and various specialized circuitry which relate directly to the courses for which they have been designed. They directly support courses ECE 2ABC, 6AB, 136ABC, 138AB, and 139AB.

The Communications Laboratory. The Communications Laboratory contains modern equipment for experimentation measurement at audio, video and intermediate radio frequencies. The available instrumentation includes various signal and function generators, modulators, spectrum analyzers, wave analyzers, probability density analyzers, random noise generators, meters and recording instruments, and low-frequency sweeping systems for amplitude phase and time delay measurements. This laboratory directly supports ECE 140, 146AB, and graduate research as appropriate.

The Control Systems Laboratory. The Control Systems Laboratory is devoted to experimental aspects of control systems analysis and design. It contains a variety of specialized equipment plus an appropriate complement of general laboratory equipment for the mechanization of various analog and digital control systems, including microprocessor-based control systems. This laboratory directly supports ECE 147AB.

The computer laboratory and departmental computing facilities. The Department maintains a Computer Laboratory which contains an IBM 1800 computer system, a Burroughs 1720 microprogrammable computer system, a Nova minicomputer computer system, three IBM 5100 stand alone computer systems, and various peripherals to support these computer systems. The Laboratory also contains a complement of analog computing facilities which include seven TR20 analog computers and an EAI680 analog hybrid computer. Additionally the Department maintains a set of interactive terminals and graphics terminals which are interfaced directly to the Computer Center facilities which consist of an ITTEL AS/6 and a PDP11/70 computer and the Computer Systems Laboratory which has a PDP11/45 computer. This laboratory and the terminal room which supports it are available to the faculty and students of the Department on an open shop basis and support a wide variety of courses and ongoing research efforts in the Department. A wide variety of languages are available on the Computer Center computers including APL, BASIC, BASIC+, "C", COBOL, FORTRAN, interactive FORTRAN, PL/C, PL/I, and SPEAKEZ. Graphics facilities in the laboratory include a Tektronix 4015 with enhanced graphics package and an APL keyboard, and a Tektronix 4013, which has an APL keyboard. APL is also

available via telephone modems to UCLA and Irvine.

Digital Systems Laboratory. The Digital Systems Laboratory of the ECE Department at UCSB contains ten laboratory benches, each of which is equipped with a microcomputer, power supplies, a digital voltmeter, a Tektronix oscilloscope and a pulse generator. In addition, the laboratory contains a variety of peripherals (i.e., terminals, audio cassettes), test equipment, additional microprocessor modules (i.e., INTEL 8080A, ZILOG, Z80, Motorola 6800, TI-9900), super boards, and assorted electronic components. A Data General 1210 minicomputer has been interfaced via a "bench controller" to each of the ten laboratory benches so that the major data and control lines necessary to interface a hardware process to the minicomputer are available at the bench.

The facilities provided by the laboratory allow both undergraduate and graduate students to design and implement a wide variety of electronic systems in which the digital computer is a system element. For example, a user can prototype a hardware process, interface it to the mini- or microcomputer as a peripheral, and then exercise the process with an appropriately written computer program.

The laboratory currently services undergraduate courses in logic design and switching theory, computer organization, and digital system design (ECE 152A—B). On a graduate level the laboratory is used to support both instruction and research in advanced digital system design, microcomputer applications, performance evaluation, and similar topics.

Microwave Laboratory. The Microwave Laboratory is used for both student instruction and research on microwave devices and acoustic-surface-wave devices. The laboratory has sweep-signal-generator coverage from 0.1 MHz to 40 GHz and has microwave measurement equipment such as slotted lines, directional couplers, standing-wave amplifiers, wavemeters, and oscilloscope display units. In addition, the laboratory includes two automatic network analyzer systems which provide a display of complex impedance and of transmission magnitude and phase-over frequencies within the range of 0.1 MHz to 12 GHz. Also included are a microwave spectrum analyzer, a sampling oscilloscope which works into the microwave range, and several time-domain reflectometer systems. Students in the senior course on electromagnetic waves (ECE 144A—B) perform experiments in the laboratory which teach them methods for microwave measurements and which familiarize them with many types of microwave equipment. Graduate students studying microwave transistor circuit design (ECE 202A) also make considerable use of the laboratory as do various researchers.

Optical and Acoustical Systems Laboratory. The Optical and Acoustical Systems Laboratory is primarily being used for research in acoustic imaging. In this regard, facilities have been developed for Bragg-diffraction imaging and imaging with a scanning-focused acoustic beam. In Bragg-diffraction imaging, the image information is read out by means of laser light, and in the scanning-beam approach, by piezoelectric transducers. In addition to the acoustic imaging, past experimental activity has included optical holography, computer enhancement of images, experiments of a fundamental nature on scalar-wave theory, data processing of optical and acoustical phenomena, la-

sers in remote sensing of gas mixtures, and dye lasers with periodic resonators. The facilities are available also for both graduate and undergraduate instruction and have been used extensively in classes on Optical Systems Theory and Computer Image Processing. The equipment in the Laboratory includes a five-watt argon-ion laser, several helium-neon lasers, a pulsed ruby laser, a pulsed nitrogen laser, a vidicon and TV monitor, an acousto-optic laser deflector, a Pockels-effect light modulator, an auto-collimator, a number of optical benches and stable tables, and associated optical test components.

Signal Processing Laboratory. The Signal Processing Laboratory has been equipped with the appropriate hardware and software resources to provide students with hands-on experience in digital and analog signal processing, including all aspects of the design and implementation. A variety of special-purpose computer programs (i.e., SPICE, DINAP, FILSYN, etc.) are available to assist in the computer-aided analysis and design phase of both digital and analog filters. Access to these programs is provided through interactive terminals stationed in the laboratory. An appropriate mixture of hardware components including analog-to-digital and digital-to-analog converters, both digital and analog filters, microprocessor-based digital filter laboratory stations, and other analog and digital integrated circuits are available to investigate signal processing fundamentals and the hardware implementation of rudimentary digital and analog filter structures. For the implementation of complex higher-order digital filters, the laboratory is equipped with a hardware digital filter system controlled by a LSI-11 micro-computer which can be accessed simultaneously by up to four students through specially designed keyboard terminals. This system, donated by the Bell Laboratories, is provided with four sets of sample/hold, analog-to-digital, and digital-to-analog converter units. In addition to the above, the laboratory is well equipped with various test equipment such as oscillo-

scopes, signal and pulse generators, etc. The Laboratory directly supports ECE 148 and 149 and 158, as well as various research efforts in analog and digital signal processing.

Solid State Laboratory. The Solid State Laboratory is one of the best-equipped solid-state device laboratories for both teaching and research in universities in the nation. It has complete facilities for almost all technological processes of silicon device and integrated circuit technology, from the maskmaking stage, through all steps of device fabrication, to device characterization. In addition to standard mask making and diffusion facilities, vapor-phase epitaxial growth and ion implantation are available. Measurement and evaluation techniques include a scanning electron microscope. In the area of compound semiconductor technology, state-of-the-art molecular beam epitaxy (MBE) equipment has just been installed.

Typical undergraduate device fabrication teaching projects (under ECE 160B—C) include thin-film resistors, logical-AND integrated circuits, MOS inverters, discrete bipolar transistors, and CMOS circuits. Graduate projects (under ECE 220A—C) include I²L logic, CCD circuits, and general process characterization.

Current research interests include solar cells, thin oxides, ion implantation-gettering, compound semiconductors, CCD's, general device physics, heterojunctions (HJ), and molecular beam epitaxy (MBE). The latter two areas (HJ & MBE) are strongly supported by several research contracts from several agencies. The MBE facility is one of the first university facilities so equipped in the nation. It is devoted to research and development of improved and new kinds of devices that cannot be fabricated by other technology. The emphasis is on heterojunction devices, including the study and utilization of new device principles occurring in HJ device structures made possible by MBE technology.

Courses Offered In Computer Science

220A—B • Automaton-Based Complexity (4-4), W/S, Staff

Prerequisites: Computer Science 221A and 131. *Not open for credit to students who have received credit for MATH 251.*

Models of Computation: RAM, TM, and others; time and space complexity classes, efficient reducibilities, complete problems; lower bounds; algebraic characterization of complexity classes, the polynomial hierarchy.

221A—B • Formal Languages (4-4), F/W, Staff

Prerequisites: Computer Science 120. *Not open for credit to students who have received credit for MATH 252.*

Context-free grammars and languages, normal-form theorems, pumping lemma, characterization theorems, language classes, parsing, decision problems; context-sensitive grammars and languages, characterization theorems.

222 • Computability (4), S, Staff

Prerequisites: Computer Science 221A. *Not open for credit to students who have received credit for MATH 253.*

Partial and total recursive functions, Godel numberings, recursion theorem, reducibilities, the arithmetic hierarchy, Blum's axioms, union, gap and speedup theorems; priority arguments.

230A—B • Topics in Algorithms and Complexity (4-4), F/W, Staff

Prerequisites: Computer Science 131 and 132. *Not open for credit to students who have received credit for MATH 254.*

Topics include: Fast probabilistic algorithms, traveling salesman problem, graph isomorphism, nearest neighbor; number theoretic algorithms, primality and factoring; complexity of algebraic and numeric problems; complexity of graph theoretic problems, node deletion.

260 • Advanced Topics in Translation (4), S, Staff

Prerequisites: Computer Science 160 and 162. *Not open for credit to students who have received credit for EE/CS 267.*

Theoretical aspects of translation. Topics in-

clude: parsing algorithms for LR and LL grammars, intermediate code generation, flow analysis, optimization; run-time environments, attributed grammars, error processing.

262 • Advanced Topics in Programming Languages (4), W, Staff

Prerequisites: Computer Science 160 and 162. *Not open for credit to students who have received credit for EE/CS 266.*

Topics include: advanced design principles; formal semantic models including Vienna Definition Language, attributed grammars, lambda calculus; data abstraction; formal proofs of correctness, language extensibility.

270A—B • Advanced Topics in Operating Systems (4-4), W/S, Staff

Prerequisites: Computer Science 170 and 154. *Not open for credit to students who have received credit for EE/CS 273AB.*

Implementation of operating systems; process and resource control, storage management, file systems, time-sharing and real-time systems; probability and combinatorial models of computer sequencing and allocation problems.

272A—B. Software Engineering (4-4), W/S, Staff

Prerequisites: Computer Science 172; knowledge of formal systems such as obtained in Computer Science 120B. Not open for credit to students who have received credit for ECE 272AB

Principles of software engineering discipline emphasizing structured programming concepts and their formalizations; design; coding; testing and correctness proofs; management; software metrics; tools.

274 • Advanced Topics in Data Base Management Systems (4), S, Staff

Prerequisites: Computer Science 174 Not open for credit to students who have received credit for EE/CS 268.

Data models, semantics and translation; data integrity; data base languages; design and evaluation of storage structures; associative processors; data base design tools and methodology; distributed data bases.

276 • Distributed Computing and Computer Networks (4), S, Staff

Prerequisites: Computer Science 270A.

Distributed processing task partitioning, inter-process communication, synchronization, reconfiguration, file allocation and deadlock problems; computer communication network models, analysis and synthesis.

278 • Simulation (4), F, Staff

Prerequisites: Math 107 and 108A.

Model formulation and programming for discrete event systems. Considerations in the design and implementation of simulation languages; statistical consideration; design of experiments, random number generation, data analysis.

290AA—ZZ • Special Topics in Computer Science (1-5), Staff

Prerequisites: Consent of the instructor.

These variable unit courses provide for the study of topics of current interest in computer science. Special topics are coded as follows: A. Artificial Intelligence; B. Computer Graphics; C. Pattern Recognition; D. Program Verification; E. Computer Architectures; F. Algorithms and Complexity; G. Mathematical Theory of Computation; H. Semantic Models; J. General.

Courses Offered In Electrical and Computer Engineering

Lower Division courses

2A—B—C • Circuits, Devices and Systems (4-4-4) Baldwin

Prerequisites: Mathematics 3A—B—C, or consent of instructor. Lecture, three hours; Laboratory three hours.

1. Circuits: natural response, forced response, complete response, sinusoidal steady state, theorems 2. Electronic Devices: principles, linear models, amplifiers, dc machines, transformers. 3. Systems: feedback, instrumentation. 4. Digital electronics. (F,W,S)

Engineering 3A—B • Computer Solutions of Engineering and Science Problems (3-2) Staff

Prerequisites: Mathematics 3A—B, concurrently.

Applications of computers to engineering and scientific problems. FORTRAN language programming, elements of numerical analysis, including introduction to error sources, recursion, numerical calculus, root finding, etc. Students will use the computer.

Available to lower-division students in engineering, science and mathematics. Not recommended for upper-division students (F,W)

5 • Introductory Digital Computing Lab (4) Staff [B2] Lecture, three hours; Discussion, one hour

A brief introduction to basic components, organization and operation of digital computers. Provides usable knowledge of FORTRAN coding and program preparation for an IBM 360/75 digital computer with emphasis on the applications of digital processing. (F,W,S,SS)

6A—B • Circuits and Electronics (3-3) Skalnik

Prerequisites: Mathematics 3A—B—C, or consent of instructor. Lecture, two hours; Laboratory, three hours.

Introduction to basic electrical circuits and electronics. Includes Kirchhoff's laws, network responses, power distribution, diodes, transistor circuits, analog computation and instrumentation. For the non-ECE engineering major. (W,S)

8 • Problem Solving with Array Processing Languages (3) Staff

Prerequisites: ECE 5, ENGR 3A—B or consent of instructor. Lecture, two hours; Discussion, two hours.

Introduction to the use of array processing languages (e.g. APL, SPEAKEZ) for solution of representative electrical and computer engineering problems. Student will develop and execute a series of representative APL/SPEAKEZ programs. Available to ECE majors only. (F)

15A • Introduction to Computer Organization (4) Howard [B2]

Prerequisites: Engineering 3A or equivalent. Lecture, three hours; Laboratory, three hours.

Digital computer organization and introduction to hardware and software concepts. Digital logic circuits, integrated circuits and digital functions. Data representation. Register transfer, microoperations. Basic computer organization. Elements of computer software: assembly language programming, subroutines, I/O programming interrupt processing, and aspects of systems programming Not open to students who have received credit for CMPSC 30 or EE/CS 105A. (F,W,S)

15B • Microcomputer Architecture, Organization and Programming (4) Howard [B2]

Prerequisites: ECE 15A or ECE 105A or CMPSC 30 or consent of instructor. Lecture 3 hours; Discussion 1 hour.

Study of the internal organization and architecture of microcomputers with emphasis on representative microcomputer systems such as the Intel 8080A and Motorola 6800. Microcomputer assemblers and assembly language programming. Software development for microcomputers: program design, coding, debugging, testing, and documentation. Not open to students who have received credit for ECE 105B or CMPSC 40. Discussion required. (W)

Upper Division courses

Engineering 100 • Engineering Cost-Benefit Analysis (3) Staff

Prerequisite: Upper division standing in engineering or consent of instructor.

Engineering feasibility factors and engineering economic analysis. Analysis of alternatives and estimates of demands and costs in engineering. Probability, uncertainty and risk. Environmental impact analysis. (S)

107A—B—C • Directed Research (1-4) Staff

Prerequisite: Consent of instructor.

Directed research projects open to qualified undergraduates in electrical engineering or related fields. Research projects are arranged by student and staff member. The course is designed to give unusual undergraduates early experience in research. Not acceptable for departmental senior electives. (F,W,S,SS)

113 • Systems Analysis and Information System Design. (4) Staff

Prerequisites: Engr. 3A or ECE 5 or Mathematics 6A or Sociology 109A or equivalent; or consent of instructor.

Introduction to principles and techniques involved in the analysis of information-processing requirements of large-scale organizations and the design and development of computer-based information systems. Includes overview of implementation, control and evaluation phases of system development. This course is the same as Sociology 113.

115 • Computer-aided Instruction Systems. (4) Howard, Wood

Prerequisite: Senior standing or consent of instructor.

For students who plan to utilize computers as teaching tools. Computer fundamentals, developing skill in a programming language. Programming techniques with applications to educational problem-solving strategies. Techniques of utilizing the computer to assist in providing individualized instruction. CA1 history, modes, languages, software and hardware requirements. Methods of developing course ware. Economics of CA1 systems. This course is the same as Sociology 115.

130A—B • Signal Analysis and Processing (4-4) Rhodes [B2]

Prerequisites: Mathematics 5A—B or consent of instructor. Lecture, three hours; Discussion, one hour.

Analysis of discrete- and continuous-signal linear systems using Fourier, Laplace and z transform methods. Graph theory. Concepts of complex variables are included as needed for transform theory. (F,W)

130C • Signal Analysis and Processing (4) Rhodes [B2]

Prerequisites: ECE 130 A—B, 139A or consent of instructor. Lecture, three hours; Discussion, one hour.

A continuation of discrete and continuous signal analysis in greater depth. Linear discrete-time and continuous-time signal processing.

134 • Introductory Field Theory (3) Merz

Prerequisites: Physics 7B or equivalent, Mathematics 5C, or consent of instructor. Lecture, three hours.

Electric- and magnetic-field concepts and laws. Fundamentals of vector analysis. Dipoles, properties of materials, energy. Maxwell's equations. Laplace, Poisson, and wave equations, and methods for their solution. Plane waves. (F)

136A—B • Electronics (4-4) Kotzebue

Prerequisites: Mathematics 5C, ECE 2A—B—C or consent of instructor. Lecture, three hours; Laboratory, three hours

Electronics for electrical engineering students. The emphasis is on the study of basic circuits employing semiconductor devices, with particular attention given to the analysis and design of small-signal, broadband amplifiers. (W,S)

136C • Digital Electronics (4) Baldwin

Prerequisite: ECE 136A or consent of instructor. Lecture, three hours; Laboratory, three hours.

This course will provide an introduction to electronic circuits used in digital systems. It will consist of a study of device switching characteristics, basic active logic circuits, IC logic families, sequential and combinatorial logic circuits with emphasis on general operating principles. (S)

138A • Introductory Circuits (3) Matthaei

Prerequisite: Transfer junior standing in electrical engineering, or consent of instructor. Lecture, three hours

Circuit theory for transfer students at the junior level who have not had the equivalent of ECE 2A—B—C. Usually taken concurrently with ECE 138B. (F)

138B • Introductory Electronics (3) Baldwin

Prerequisite: Transfer junior standing in electrical engineering, or consent of instructor. Lecture, two hours; Laboratory, three hours.

Electronics for transfer students at the junior level who have not had the equivalent of ECE 2A—B—C. Usually taken concurrently with ECE 138A. (F)

139A—B • Network Theory (4-4). Ordnung

Prerequisites: ECE 2C, or ECE 138A, ECE 130A, and concurrent registration in ECE 130B allowed. Lecture, three hours; Laboratory, three hours.

Analysis and design of linear electric networks using time- and frequency-domain methods and computer techniques. (W,S)

140 • Probabilistic Methods of Signal and System Analysis (4) Heidbreder

Prerequisites: ECE 130A—B—C, or consent of instructor. Lecture, three hours; Discussion, three hours.

Fundamentals of probability, random variables, random processes, spectral analysis, signal analysis in linear systems with random excitation. (F)

144A—B • Electromagnetic Fields and Waves (3-3) Matthaei

Prerequisite: ECE 134 or equivalent, or consent of instructor. Lecture, two hours; Laboratory, three hours.

Waves on transmission lines, Maxwell's equations, mathematical techniques for dynamic fields, skin effect, propagation and reflection of electromagnetic waves in materials with different electrical properties, waveguides, resonant cavities, and antennas. Microwave and optical-device examples. Selected experiments. (W,S)

145A • Large-signal Electronics (4) Kotzebue

Prerequisite: ECE 136A—B, or consent of instructor. Lecture, three hours; Laboratory, three hours.

A study of semiconductor electronic circuits with emphasis on the analysis and design of large-signal amplifiers, oscillators, and wave-shaping circuits. (F)

145B • Communications Electronics (4) Kotzebue

Prerequisite: ECE 145A, or consent of instructor. Lecture, three hours; Laboratory, three hours.

The analysis and design of solid-state communication circuits. Topics covered will include RF and IF amplifiers, AGC circuits, mixers and demodulators. (W)

145C • Special Topics in Electronics (2) Kotzebue

Prerequisites: ECE 145B or consent of instructor. Lecture, two hours.

Selected topics of current interest in analog electronics. The specific areas covered will vary with class interests. (S)

145CL • Special Topics in Electronics (1) Kotzebue

Prerequisites: Concurrent registration in ECE 145C. Laboratory, three hours.

Individual projects in analog electronics, selected to complement the topics covered in ECE 145C. (S)

146A • Analog Communication Theory and Techniques (3) Heidbreder

Prerequisites: ECE 130A—B—C, ECE 140, or consent of instructor. Lecture, three hours.

Modulation theory. AM, FM, PM and analog pulse modulation and demodulation techniques. Noise models in electronic circuits. System noise and performance calculations. (W)

146AL • Analog Communication Laboratory (1) Heidbreder

Prerequisite: ECE 146A must be taken concurrently. Normally required of all students enrolled in ECE 146A, but is optional for students also enrolled in ECE 145B or who demonstrate a suitable background of laboratory experience. Laboratory, three hours.

Experiments in techniques of modulation and demodulation. (W)

146B • Digital Communication Theory and Techniques (3) Heidbreder

Prerequisites: ECE 130A—B—C, ECE 140, ECE 146A or consent of instructor. Lecture, three hours.

The quantitative measure of information. Introduction to the fundamental theorems of information theory and their implications in system design. Quantization and coding. Pulse code modulation (PCM). Matched filters, PCM modems, elementary decision-theory concepts. Concepts of error detection and correction. Coded PCM systems. Feedback communication systems. (S)

146BL • Digital Communication Laboratory (1) Heidbreder

Prerequisite: ECE 146B must be taken concurrently. Normally required of all students enrolled in ECE 146B but is optional for students also taking ECE 152B or who demonstrate a suitable background of laboratory experience. Laboratory, three hours.

Experiments in matched filtering, A—D conversion, D—A conversion, and generation and detection of waveforms for digital communication. (S)

147A • Feedback Control Systems Theory and Design (3) Rhodes

Prerequisite: ECE 130C or equivalent, or consent of instructor. Lecture, three hours.

Criteria for feedback systems design—frequency-domain and time-domain specifications. Design techniques for multiloop feedback systems. Direct synthesis methods. Computer-aided design methods; automated design methods. Describing function analysis of nonlinear feedback systems. Design of nonlinear feedback systems. (F)

147AL • Feedback Control Systems Laboratory (1) Rhodes

Prerequisite: ECE 147A must be taken concurrently. Laboratory, three hours.

Students will carry out several laboratory projects on modeling and control of various representative systems. (F)

147B • State-Space Methods in Systems Theory (3) Rhodes

Prerequisite: ECE 130C or equivalent, or consent of instructor. Lecture, three hours.

Vector spaces, state-space equations for dynamic systems, solutions. Fundamental matrices, transition matrices. Final-value control. Controllability. Observability. Canonical forms for state-space equations. Linear-quadratic control problems. Stability analysis using Liapunov functions and phase plane. (W)

147BL • Systems Laboratory (1) Rhodes

Prerequisite: ECE 147B must be taken concurrently. Laboratory, three hours.

Students will carry out several laboratory projects on modeling and control of various representative systems. (W)

148 • Signal Processing Laboratory (3) Mitra

Prerequisites: ECE 149, ECE 158. Discussion, one hour; Laboratory, six hours.

Experiments in analog and digital filter design; analog and digital signal processing, signal conditioning; analog-digital conversion using integrated circuits. (S)

149 • Active and Passive Network Synthesis (4) Mitra

Prerequisites: ECE 136A—B and ECE 139A—B or consent of instructor. Lecture, three hours; Discussion, one hour.

This course combines the areas of electronics and network theory in the subject of passive and active network design. Topics include passive synthesis, optimization techniques, approximations to ideal filters, distributed networks, sensitivity and the modern design techniques and applications of active filters. (F)

150 • Continuous System Simulation (4) Wood [B2]

Prerequisites: Math 5A or equivalent, ECE 2A—B—C or consent of instructor. Lecture, three hours; Laboratory, three hours.

An introduction to the simulation of continuous systems via analog, hybrid, and digital computation. Relative advantages and disadvantages of analog/hybrid/digital techniques. Application to typical engineering problems in dynamics, controls, and systems optimization. (S)

151 • Computer Memories (3) Baldwin [B2]

Prerequisites: ECE 2A—B—C or ECE 138A—B or consent of instructor. Lecture, three hours.

Hardware aspects of digital storage systems. Magnetic surface recording; access, digit and control circuits for random-access systems; core storage; semiconductor storage; read-only and read-mostly memory; associative memory; bubbles, optical storage. (F)

152A • Logic Design and Switching Theory (4) Howard [B2]

Prerequisites: ECE 15A or CMPSC 30 or consent of instructor. Lecture, 3 hours; Laboratory, three hours.

Boolean algebra, switching functions. Application of Boolean algebra to the design and analysis of combinational logic nets; minimization procedures. Analysis and synthesis of sequential switching circuits, synchronous and asynchronous operation, state minimization, hazards and races. (F,S)

152B • Digital System Design I: Design Methodologies (4) Howard [B2]

Prerequisite: ECE 152A or consent of instructor. Lecture, three hours; Laboratory, three hours.

Design methodologies of digital systems, the register and processor levels. Design of functional subsystems, including arithmetic processors, hardwired and microprogrammed control units, memory systems, and bussing systems. System organization including communication, input/output systems, and multiple CPU systems. (W)

152C • Digital System Design II: Microcomputer-Based Design (4) Howard

Prerequisites: ECE 152B and ECE 15B, or consent of instructor. Lecture, three hours; Laboratory, three hours.

Merits of microcomputer-based design. Microcomputer registers and data manipulation. Microcomputer hardware including processor, memory and I/O support devices. Microcomputer system concepts: memory mapping, interrupts, DMA, I/O systems, and multiple microsystems. Hardware and software development procedures. Application examples. (S)

154 • Introduction to Computer Architecture (4) Howard [B2]

Prerequisite: ECE 152A (can be taken concurrently), or consent of instructor. Lecture, four hours.

Computer architecture representation methods. Classical processor/memory/switch aspects of computer architecture: instructions, addressing, interpretation and control, I/O systems, and memory hierarchies. Aspects of systems architecture: protection mechanisms and hardware aids to supervision, specialized processors, and multi-processor/computer systems. Evaluation methods and systems analysis. (F)

158 • Digital Signal Processing (4) Mitra [B2]

Prerequisites: ECE 130A—B—C, or consent of instructor. Math 124A is recommended, but not required. Lecture, three hours; Discussion, one hour.

Discrete signals and systems, convolution, z-transforms, discrete Fourier transforms, digital filters. (W)

160B—C • Solid-State Device Electronics (3-3) Skalnik

Prerequisite: Senior standing or consent of instructor. Lecture, two hours; Laboratory, three hours.

Theory, design and fabrication of solid-state devices. Includes thin-film components, semiconductor diodes, transistors, MOSFET's, integrated circuits, MNOS memory devices and CCD's. (F,W)

161A • Electronic Materials (3) Kroemer

Prerequisites: ECE 130A-B, ECE 134, ECE 136A-B, ME 105.

Lecture, three hours; Discussion, one hour. Electrons as particles and as waves. Atomic structure and periodic table. Bonds. Free electrons in metals. Energy bands. Semiconductors. Semiconductor devices. Dielectric materials. Magnetic materials. Lasers. Superconductors. (W)

161B • Optoelectronic Materials and Devices (3) Merz

Prerequisite: ECE 161A

Optical transitions in solids. Direct and indirect gap semiconductors. Luminescence. Excitons and phonons. Fundamentals of optoelectronic devices: semiconductor lasers, LED's photoconductors, solar cells, photo diodes, modulators. Photoemission. Integrated optics. (S)

169 • Flows and Networks (3) Staff

Prerequisites: Math 136A or consent of instructor. Lecture, three hours.

Generating functions, introduction to graph theory; trees; circuits; cut sets; transport networks; linear and dynamic programming (S)

Engineering 170 • Introduction to Biomedical Engineering (3) Staff

Prerequisite: Senior standing in engineering, or consent of instructor. Lecture, three hours.

Survey of application of engineering principles and methods to problems arising in the life sciences (medicine and biology); analysis of the function and principles of operation of living systems; modeling and simulation of physiological regulatory systems; physiological philosophy of instrument design; etc. (W)

178 • Fundamentals of Computer Image Processing (3) Wade

Prerequisite: ECE 15A, some background in Fourier theory, or consent of instructor. Lecture, three hours.

Basic concepts in image processing. Techniques, capabilities and limitations with emphasis on use of digital computer but also treating optical and analog systems. Image sampling, reconstruction, enhancement, restoration, data extraction and coding. Some hands-on laboratory experience is offered. (S)

185 • Materials in Engineering (3) Kroemer, Merz

Prerequisites: Upper division standing in Engineering, or consent of instructor.

Lecture, three hours. Materials science and engineering in the solution of today's complex technological problems. A team of six faculty lectures on various aspects of this topic, which emphasize applications of materials, material production techniques, and environmental effects on materials. (Not offered 1980-81)

192 • Projects in Electrical and Computer**Engineering (4) Staff**

Prerequisites: Consent of instructor. Discussion, two hours; Laboratory, six hours.

Projects in Electrical and Computer Engineering for advanced undergraduate students. May be repeated for credit with consent of instructor. (F, W, S, SS)

193 • Internship in Industry (1-4) Staff

Prerequisite: Consent of instructor.

Special projects for selected students. Offered in conjunction with engineering practice in local industrial and research firms. May be repeated to a maximum of four units as Departmental elective. (F,W,S,SS)

194AA—ZZ • Group Studies in Electrical and Computer Engineering (1-5) Staff

Prerequisite: Consent of Instructor

Group studies intended for small number of advanced students who share an interest in a topic not included in the regular Departmental curriculum. Topics covered by these group studies are coded as follows: A. Circuits. B. Systems Theory. C. Communications Systems. D. Control Systems. E. Signal Processing. F. Solid State. G. Fields and Waves. H. Quantum Electronics. I. Microwave Electronics. J. Switching Theory. K. Digital Systems Design. L. Computer Architecture. M. Computer Graphics. N. Pattern Recognition. O. Microprocessors and Microprocessor Based Systems. P. Simulation. Q. Imaging Systems and Image Processing. R. General. (Check with Dept. for quarters offered.)

199 • Independent Studies in Electrical and Computer Engineering (1-5) Staff

Prerequisite: Consent of instructor and fulfillment of requirements listed below.

Directed individual study, normally experimental. Open to qualified students having upper-division standing in ECE courses and at least a 3.0 GPA for three consecutive quarters. 199 courses are limited to no more than five units in one quarter, no more than 15 units per year, and a maximum of 30 units of independent study. (F,W,S,SS)

Graduate Courses**201A—B • Electromagnetic Theory (3-3) Matthaei**

Prerequisites: ECE 144A—B or equivalent, or consent of instructor. Lecture, three hours.

Fundamental theorems and techniques for treatment of electromagnetic boundary value and radiation problems. Perturbational, variational, and computer-numerical methods, with microwave engineering examples. (F,W) (Not offered 1980-81).

201C • Antennas (3) Matthaei

Prerequisites: ECE 144A—B or equivalent, or consent of instructor. Lecture, three hours.

Classical and computer-numerical methods for analysis and design of antennas. Single-element antennas, antenna arrays and analysis of mutual-impedance effects, aperture antennas, and frequency-independent antennas. Offered in alternate years with ECE 201D.

201D • Microwave Circuits (3) Matthaei

Prerequisites: ECE 144A—B. ECE 144B may be taken concurrently, or consent of instructor. Lecture, three hours.

Field and circuit theory applied to waveguide and transmission-line networks. Analysis of dis-

continuities and couplings, resonators, filters, and directional couplers. Fundamental limitations for wideband impedance matching, design techniques for optimum wideband coupling structures for solid-state (and other) devices. Offered in alternate years with ECE 201C.

202A • High-frequency Transistor Circuits (4) Kotzebue

Prerequisites: ECE 136A—B or consent of instructor. Lecture, three hours; Design project, one hour.

Techniques for the design of transistor circuits at high frequencies. Topics include transistor high-frequency figures of merit, stability factors, the Linvill design technique, and the use of scattering parameters in amplifier design. Offered in alternate years. (F)

202B • Microwave Solid-state Electronics (4) Kotzebue

Prerequisite: ECE 202A or consent of instructor. Lecture, three hours; Discussion, one hour.

Selected topics in microwave electronics such as parametric amplifiers, tunnel diode amplifiers, frequency multipliers, transferred electron devices, and IMPATT and TRAPATT devices. Offered in alternate years. (W)

203 • Introduction to Queuing Theory (4) Wood

Prerequisites: ECE 140 or consent of instructor. Lecture, four hours.

Discrete- and continuous-time Markov chains, birth-death processes, birth-death queuing systems in equilibrium, Markovian queues in equilibrium, results from M/G/1, G/M/m, and G/G/1 queues. To be offered 1980-81. (W)

204A—B—C • Advanced Engineering Analysis (4-4-4) Staff

Prerequisite: ECE 130A—B—C or equivalent, or consent of instructor. Lecture, four hours.

Selected topics in advanced mathematics for engineers, including such topics as engineering applications of some higher transcendental functions, asymptotic expansions, calculus of variations, etc. (F,W,S)

205A • Theory of information (4) Heibredner

Prerequisites: ECE 140 or equivalent, or Math 122A—B or equivalent, or consent of instructor. Lecture, four hours.

The concept of information and its quantitative measure, description of information sources in terms of Markov processes, discrete noiseless channels, channel capacity, noisy channels, continuous channels, signal design for noise immunity, error detection coding, and other applications of information theory in communications. (S)

207 • Research Projects or Independent Studies (1-6) Staff

Graduate research projects or independent studies to be arranged between students and staff members. See M.S. Degree Requirements, Plans I and II, regarding number of units which may be used for M.S. degree. (F,W,S,SS)

208A—B—C • Optical Systems Theory (4-4-4) Fontana

Prerequisite: ECE 144A—B or equivalent, ECE 146A—B or equivalent, or consent of instructor. Lecture, four hours.

Communication theory techniques, including Fourier transforms and autocorrelation func-

tions, as applied to optical systems. Mathematical descriptions due originally to Rayleigh, Sommerfeld, Abbe, Michelson, Kirchhoff, Fresnel, Gabor and others. Coherent image formation, holographic wavefront reconstruction, optical-data processing and other topics. (F,W,S)

211A—B • Engineering Quantum Mechanics (4-4) Kroemer

Prerequisites: ECE 144A, either ECE 160A or ECE 225A or consent of instructor. Lecture, four hours.

Wave-particle quality. Schroedinger equation. Energy bands. Bound states. Operators, eigenvalues. Symmetry. Perturbation theory, optical transitions. Treatment throughout designed to match background and needs of engineering students, particularly in solid-state and quantum electronics. (F,W) (Offered alternate years)

220A • Solid-state Device Processing (4) Skalnik

Prerequisites: ECE 160B—C or consent of instructor. Lecture, three hours; Discussion, one hour.

An intensive theoretical and experimental survey of solid-state fabrication processes, including (1) thermal, CVD, and sputtering oxides; (2) diffusion; (3) polysilicon and silicon epitaxy; (4) ion implantation; (5) vacuum processes, and (6) scanning electron microscopy. Process characterizations will emphasize practical limits, reproducibility, and the capability of controlling device parameters. (F)

220B—C • Solid-state Device Design and Fabrication (4-4) Ordnung

Prerequisites: ECE 225A, ECE 220A or consent of instructor. Lecture, four hours.

The fundamentals, the design, the fabrication, and the characterization of junction and field-effect devices. Topics will include bipolar characterization, design, fabrication and testing. The laboratory effort initiated in ECE 220A will be continued in these two quarters. (W,S)

227 • Guided Wave Optics (4) Merz

Prerequisites: ECE 144A—B or consent of instructor. Lecture, four hours.

Theory of dielectric waveguides; techniques for mode launching, including prisms, gratings, tapers, and phase couplers. Waveguide fabrication and measurement. Materials and devices suitable for integrated optics. (W) (Offered in alternate years; not offered 1980-81)

228 • Optoelectronic Devices (4) Merz

Prerequisites: ECE 161A, ECE 215A, or consent of instructor. Lecture, four hours.

Fundamentals of compound semiconductors as used in optoelectronic devices. Emphasis on semiconductor lasers, but other devices, such as LED's, opto-isolators, detectors, modulators and solar cells will be treated. (S) (Offered in alternate years; not offered 1980-81)

237 • Advanced Network Theory (4) Mitra

Prerequisites: ECE 139A—B or consent of instructor. Lecture, four hours.

Foundations of network theory. Graph theory and network equations, network functions and representations, state equations, integral solutions, scattering matrices. (W)

238A • Passive Filter Design (4) Mitra

Prerequisites: ECE 149. Lecture, three hours; Workshop, one hour.

An introduction to the design of passive filters with lumped and distributed elements. Filter specification and design process; Reactance transformations; Approximation theory; Passive filters, with lumped elements. Crystal and ceramic filters. Mechanical filters. (odd-numbered years) (S)

238B • Active Filter Design (4) Mitra

Prerequisites: ECE 149. Lecture, three hours; Workshop, one hour.

An introduction to the design of active filters with lumped, distributed elements, and switches. Active filters with lumped FC networks, active filters with distributed RC networks, switched filters, n-path filters. (even-numbered years)

240A • Optimal Estimation and Filtering (4) Heibredner

Prerequisites: ECE 140 or equivalent, ECE 147B, Math 108 or linear algebra, or consent of instructor. Lecture, four hours.

Optimal estimation concepts and theory (Minimum variance, least-squares, and maximum likelihood estimation), optimal recursive algorithms for discrete- and continuous-time filtering of noisy signals and data, Wiener and Kalman filters, stability of recursive optimal filtering algorithms, modeling errors in recursive filters. (W)

240B • Detection Theory (4) Heibredner

Prerequisites: ECE 140 or equivalent, or consent of instructor. Lecture, four hours.

Hypothesis testing and its application to the formulation of decision rules for the "optimal" detection of signals in a noisy environment. Selection of optimality criteria, the derivation of optimum receivers, applications in radar and digital communications. Discussion of estimation theory as it relates to the estimation of parameters of detected signals. (S)

247A • Systems Optimization by Vector Space Methods (4) Rhodes

Prerequisites: ECE 271A—B, Math 160 or Math 118, or equivalent, or consent of instructor. Lecture, four hours.

Formulation of system optimization problems in vector spaces (function spaces), range space for linear operators in vector spaces and controllability and observability, iterative computational methods, computational experiments on practical problems. (S)

247B • Optimal Control Techniques (4) Rhodes

Prerequisite: ECE 247A, or consent of instructor. Lecture, four hours.

Necessary and sufficient conditions for optimal control of dynamic systems, control- and state-variable constrained problems in optimal control, computational methods for two-point boundary value problems, computational experiments on practical problems. (W)

247C • Systems Identification (4) Staff

Prerequisites: ECE 147B, ECE 240A, ECE 247A—B, or consent of instructor. Lecture, four hours.

Equivalent system models and canonical forms for state equations, impulse- and frequency-response identification methods, state model identification methods, application to selected problems. (S)

250 • Advanced Topics in Computer Architecture (4) Staff

Prerequisites: ECE 154, Cmp Sc 170.

Parallel and pipeline computer systems. High level language computer architectures. Multi-processor networks. Distributed computer systems. Special purpose signal processors. (W)

252A • Sequential Machines and Automata Theory (4) Howard

Prerequisite: ECE 152A or consent of instructor. Lecture, four hours.

Structure of sequential machines, covers, partitions, decomposition and synthesis of multiple machines. State identification and fault detection experiments. Memory characteristics of finite automata. Linear sequential machines. Finite-state recognizers, regular expressions and regular sets corresponding to transition graphs. ECE 252A—B—C taught every year. (F)

252B • Digital Computer Design; Digital Computer Arithmetic (4) Howard

Prerequisites: ECE 152A—B or consent of instructor. Lecture, four hours.

Computer system design problems concerned with the organization and implementation of digital arithmetic processors. Basic and advanced algorithms for arithmetic operations and their hardware realization, error considerations in digital arithmetic, comparison of various approaches (e.g., serial, parallel, pipelined, multiple-processor) to arithmetic processor design. (W)

252C • Advanced Topics in Digital System Design (4) Howard

Prerequisite: ECE 152A—B or consent of instructor. Lecture, four hours.

Digital system design utilizing microprocessing and associated LSI devices. Hardware and software design methodologies of mini/microcomputers for dedicated applications. Design considerations for distributed mini/microcomputer systems. Microprogrammed mini/microsystems. (S)

253 • Magnetic Recording (4) Baldwin

Prerequisite: ECE 151 or consent of instructor. Lecture, four hours.

Magnetic recording and playback, analog and digital. Heads: magnetic coating; record and reproduce processes; noise; transports. (Interested students should contact the instructor.)

254 • Ferrite and Garnet Microwave Devices (4) Baldwin

Prerequisite: ECE 151 or consent of instructor. Lecture, four hours.

Microwave properties of magnetic materials; wave propagation in gyrotropic media; circulators; isolators; switches, etc. (Interested students should contact the instructor.)

255 • Future Trends in Computer Memories (4) Baldwin

Prerequisites: ECE 15A, ECE 151, or consent of instructor. Lecture, four hours.

A discussion of the future trends of holographic, semiconductor, magnetic and other types of bulk storage. The current state of the art, future limits and needs will be covered.

256 • Digital Design Automation (4) Staff

Prerequisites: ECE 152A—B or consent of instructor.

Overview of design automation. Physical design: partitioning of functional elements, site selection and placement, wire wrap interconnection, printed circuit board layout, typical data

structures. Simulation for design verification, test generation, and fault detection. Design automation batch and interactive computer systems. Software engineering in design automation.

257. Fault Tolerant Computing (4) Staff

Prerequisites: ECE 152A—B or consent of instructor

Physical faults and testing, logical fault models. Generation of diagnostic tests for combinational and sequential circuits. Simulation techniques. Reliable design theory, techniques, and analysis of digital systems. Case studies of fault tolerant computer systems. (F)

258 • Advanced Digital Signal Processing (4) Mitra

Prerequisites: ECE 158 or consent of instructor.

Digital filter design, discrete random signals, effects of finite word length arithmetic (error analysis), power spectrum estimation. (S)

259 • Digital Speech Processing (4) Staff

Prerequisite: ECE 158 or consent of instructor. Lecture, four hours.

The speech production model, cepstral analysis, linear predictive analysis and synthesis, vocal tract modeling, low bit rate vocoding. Offered every other year. (S)

260A—B • Principles of Quantum Electronics (4-4) Fontana

Prerequisites: ECE 160A and ECE 144A or equivalent, or consent of instructor. Lecture, four hours.

Energy levels in atoms, ions, and molecules. Interaction between radiation and quantized systems. Stimulated emission devices. Optical resonators. Lasers. Electro-optic devices and nonlinear effects. (W,S)

269 • Computer and Communication Networks (4) Heidbreder

Prerequisites: ECE 169, ECE 154, or consent of instructor.

Taxonomy of network architecture; distributed processing; time sharing; delays in communication networks; performance evaluation; case studies of actual networks. Taught every other year. Not available to students who have received credit for CMPSC 276. (S)

Engineering 270A—B—C • Physiological Basis of Biomedical Engineering (3-3-3) Horvath

Prerequisite: Undergraduate course in control systems, or consent of instructor.

Provides an intensive presentation of the physiology of a single-organ system and the application of this knowledge to engineering concepts. Systems covered will vary with student interest. Examples are the cardiovascular, respiratory, renal, endocrine, metabolism and transport systems. (F,W,S)

271A • Numerical Search Methods I (4) Wood

Prerequisites: Math 108 or equivalent linear algebra background. Lecture, four hours.

Types and sizes of numerical search problems; linear problems, linear programming, the simplex search method, duality. Unconstrained nonlinear problems, basic properties of solutions and algorithms, global convergence, convergence rate and complexity considerations. Computational experiments on practical problems. (F)

271B • Numerical Search Methods II (4) Wood

Prerequisite: ECE 271A or equivalent, or consent of instructor. Lecture, four hours.

Constrained nonlinear problems, basic properties of solutions and algorithms. Primal, penalty and barrier, cutting plane, and dual methods. Forward and backward dynamic programming methods. Convergence rate and complexity considerations. Computational experiments on practical problems. (W)

272A—B • Software Engineering (4-4) Staff

Prerequisites: CMPSC 170, CMPSC 162 or consent of instructor. Lecture, four hours.

Principles of software engineering discipline emphasizing structured programming concepts and their formalizations; software design and management; program testing and correctness proofs; data abstraction; diagnostic tools; dual programming; software metrics.

276A—B—C • Special Topics in Solid-State Devices (4-4-4) Ordnung, Skalnik

Prerequisite: Consent of instructor.

Solid-state device group-study seminar on topics of current interest which may include surface and bulk phenomena, devices of interest to integrated circuits and optoelectronics, and their fabrication. May be repeated for credit with consent of instructor. (F,W,S)

277A • Computer Graphics (4) Wood

Prerequisite: ECE 15A or consent of instructor. Lecture, four hours.

Basic concepts of interactive devices, language for computer graphics, interrupt handling techniques, display-list manipulations, and display processors will be covered. A survey of outstanding graphics systems will be made. Taught every other year. (Fall 1980)

277B • Pattern Recognition (4) Wood

Prerequisites: ECE 130A—B—C, 15A, or consent of instructor. Lecture, four hours.

Algorithms used in the automatic recognition of patterns by machine. Machine learning and classification problems, scene analysis, speech recognition and character recognition techniques will be covered. (W) Taught every other year.

278 • Computer Image Processing (4) Staff

Prerequisites: ECE 178 or its equivalent, or consent of instructor. Lecture, three hours, Lab, three hours.

Processing of pictorial information by computer including digital, optical and other analog methods. Follow-on course to ECE 178 with concepts presented at a somewhat more advanced level. Laboratory experience is offered. (F)

279 • Computer System Performance Evaluation (4) Wood

Prerequisites: ECE 140, ECE 154, CMPSC 170 or consent of instructor.

Overview of the evaluation of computer system performance. Measurement, simulation and analytic techniques for performance analysis. System work load characterization. Examples of performance evaluation for system selection, tuning, and design. Evaluation of program performance. (F)

594AA—ZZ • Special Topics In Electrical and Computer Engineering (1-5) Staff

Prerequisites: Consent of instructor and graduate status.

Instruction in these variable unit courses may be carried out by lecture or by laboratory or by a combination of these. These courses provide a study of topics of current interest in various areas of electrical and computer engineering. Special topics are coded as follows: A. Circuits. B. Systems Theory. C. Communication Systems. D. Control Systems. E. Signal Processing. F. Solid State. G. Fields and Waves. H. Quantum Electronics. I. Microwave Electronics. J. Switching Theory. K. Digital Systems Design. L. Computer Architecture. M. Computer Graphics. N. Pattern Recognition. O. Microprocessors and Microprocessor Based Systems. P. Simulation. Q. Imaging Systems and Image Processing. R. General. (F,W,S)

595AA-ZZ • Group Studies in Electrical and Computer Engineering (1-5) Staff
Prerequisites: Consent of instructor.

Instruction in these variable unit courses may be carried out by lecture or by laboratory or by a combination of the two. These courses provide critical review of research in various areas of electrical and computer engineering. (See ECE 594AA-ZZ for list of topics.) (F,W,S)

596 • Directed Research (2-12) Staff
Research, either experimental or theoretical, may be undertaken by properly qualified graduate students under the direction of a faculty member. (F,W,S,SS)

597 • Individual Studies for M.S. Comprehensive Examinations and Ph.D. Examinations (1-12) Staff
Individual studies for M.S. comprehensive examinations and Ph.D. examinations. Maximum of 12 units per quarter. S/U grading. Instructor is nor-

mally student's major professor or Chairman of doctoral committee. No unit credit allowed toward advanced degree. Enrollment limited to 24 units per exam. (F,W,S,SS)

598 • Master's Thesis Research and Preparation (1-12) Staff
Prerequisites: Consent of graduate advisor.

For research underlying the thesis and writing of the thesis. No unit credit allowed toward degree (Plan I). (F,W,S,SS)

599 • Ph.D. Dissertation Research and Preparation (1-12) Staff
Prerequisite: Permission of chairman of student's doctoral committee.

Research and preparation of dissertation. (F,W,S,SS)

Mechanical and Environmental Engineering

Professors

John C. Bruch, Jr., Ph.D., *Stanford University; groundwater flow analysis, numerical solutions and analysis, computer simulation, pollutant movement.*
Roy S. Hickman, Ph.D., *UC Berkeley; fluid mechanics, Raman spectroscopy, electron beam fluorescence, hypersonic gas dynamics, cryogenics (Chairperson).*
Wilbert J. Lick, Ph.D., *Rensselaer Polytechnic Institute; oceanography and limnology, applied mathematics.*
Ekkehard P. Marschall, Dr. Ing., *Technische Hochschule Hannover; thermodynamics, heat and mass transfer, desalination, energy conversion.*
Frederick Milstein, Ph.D., *UC Los Angeles; materials science, metallurgy, magnetism in solids, magnetic phase transformation, plastic deformation.*
Thomas P. Mitchell, Ph.D., *California Institute of Technology; theoretical and applied mechanics.*

Associate Professors

William C. Kuby, Ph.D., *Northwestern University; high temperature gas phase kinetics, air pollution chemistry and transport, propagation of forest fires.*
Robert B. Roemer, Ph.D., *Stanford University; biomedical engineering, voice controlled environmental control devices, instrumentation, mathematical modelling.*
James P. Vanyo, Ph.D., *UC Los Angeles; rotating nonrigid bodies, fluid dynamics, design optimization.*

Assistant Professors

Walter W. Yuen, Ph.D., *UC Berkeley; thermal science. Radiation heat transfer.*

Professor Emeritus

William T. Thomson, Ph.D., *UC Berkeley; dynamic analysis, stochastic methods, earthquake engineering.*

Concerns of the department

The Mechanical Engineering undergraduate program is fully accredited by the Engineers' Council for Professional Development. The purpose of the Mechanical and Environmental Engineering program is to prepare students for the practice of engineering at a professional level. The curriculum establishes a foundation in the physical and engineering sciences, mathematics, and the humanities. Students are prepared and encouraged to contribute creatively and with originality to the solution of contemporary industrial and societal engineering problems. In addition, the program provides an appropriate introduction to graduate-level engineering specialization.

Laboratory Facilities of the Department

The Department of Mechanical and Environmental Engineering maintains a wide variety of well-equipped laboratory facilities in support of its many instructional and research programs. These laboratories range from specialized lower-division course laboratories to graduate research laboratories. A brief description of the major course and research laboratories in the Department is given below.

Dynamical Systems Laboratory

This laboratory supports the theoretical studies underta-

ken in the two Engineering Mechanics courses ME 163A-B. It provides practical experience in experimental techniques and electronic instrumentation associated with Stress Wave Propagation, Dynamic Balancing, Torsional Oscillations, Structural Dynamic Response and Acoustic Measurements. The laboratory is furnished with modern equipment including microprocessor systems.

Controls Laboratory

The feedback controls laboratory is organized to give students experience in analyzing, designing, building and testing feedback control systems for a variety of applications. Major experiments are performed for a temperature control system, a vehicle speed control system, a force controlled gripping device, and a speed controlled pneumatic drill. Microcomputers are available and used for the direct digital control of the above experiments.

Bio-Medical Engineering Laboratory

A variety of both research and design projects related to the problems of paralyzed individuals are being investigated in this laboratory. Projects include the development of a speech control system, improved wheelchair design, investigation of the causes of decubitus ulcers, and the efficiency of walking. Equipment available includes automated data collection and analysis facilities including a NOVA II minicomputer and extensive microcomputer facilities.

Wind Tunnel Laboratory

A pressure driven three inch diameter shock tube is available for aerochemistry research. This facility includes gas handling equipment and vacuum pumps which allow extremely pure samples to be tested.

A 20 inch by 24 inch low speed, low turbulence, continuous tunnel is used for undergraduate and graduate research. Pitot probes, a hot wire anemometer and smoke generator allow both qualitative and quantitative measurements. The behavior of the flow over bodies at Reynolds numbers up to 6×10^4 can be easily studied.

A 4 inch by 4 inch blowdown supersonic tunnel is used for both graduate and undergraduate research and laboratory activity. A Schlieren system can be used to determine wave patterns over bodies at Mach numbers up to four.

Rotating Fluids Laboratory

The laboratory is equipped to investigate flow velocities and internal energy dissipation rates in rotating liquids. The energy dissipation apparatus can spin and precess structures containing liquids over wide ranges of operating variables. Energy dissipation rates on the order of microwatts can be accurately measured. The flow velocity apparatus uses laser doppler velocimetry to measure fluid motion in spinning and precessing structures. Variable ranges can be selected to match those of the energy dissipation results so that fluid velocities and energy dissipation data can be correlated in developing better analytical fluid models. Flow regimes ranging from slow "creeping" motions to turbulent motions can be measured. Results are

used to predict communication satellite and rocket vehicle performance, to test analytical geophysical models of the earth's interior, and to better understand phenomena in rotating and turbulent fluids.

Fluids and Thermodynamics Laboratory

This undergraduate laboratory contains a series of experiments. A pressure drop pipe experiment is used to demonstrate the practical aspects of friction factors in pipe flow. A wave tank and wave generator are used to study wave-structure interactions. A transparent centrifugal pump allows visualization of cavitation and a quantitative determination of the effect of cavitation on performance.

A completely instrumented two axis gas turbine is used to investigate the operation of heat engines in general and gas turbines in particular. A small wind tunnel is used to determine heat transfer coefficients for flow over simple bodies. A unique experiment using shell and tube heat exchangers allows the study of performance of these exchangers when condensing steam.

Thermal Science Laboratory

The Thermal Science Laboratory contains extensive equipment to study multi-phase flow, heat and mass transfer characteristics in boiling, condensation, direct-contact heat transfer, radiative heat transfer in combustion media, melting and freezing. Additional equipment is available for determination of various thermodynamic and transport properties. Present investigations include laser induced flow field visualization, direct contact heat transfer in scaling liquids, measurement of viscosities of multi-component mixtures, solar distillation, measurements of radiative emission from flames generated by hydrocarbon gaseous fuels, and development of models of radiative transfer in combustion.

Spectroscopy Laboratory

The activities carried out in this laboratory are directed toward the understanding of nonequilibrium gas dynamics. An electron beam is used as a diagnostic probe for rarefied gas conduction problems. The electron beam induced fluorescence can be spectroscopically analyzed to determine rotational temperature and the rotational accommodation coefficient.

A laser-Raman experiment is being used to probe an atmospheric-pressure hydrogen air flame.

Materials Science Laboratory

Experimental and theoretical materials science research is carried out in a variety of areas including mechanical, thermal, magnetic, and electronic properties of materials. Extensive equipment is available for studying the metallography and the mechanical behavior of materials at high temperature, including a tensile testing system capable of operating at temperatures above 2000—C, high temperature metallographs, and equipment for doing fatigue and hardness testing at elevated temperatures. A scanning electron microscope, microhardness testers, and x-ray dif-

fraction equipment are also available. Much of the current research in materials science focuses on areas that are at the interface of the fields of mechanics of materials and solid state physics. Undergraduate experiments include effects of thermal and mechanical treatment upon properties of materials.

Departmental Advising and Publications

Undergraduate counseling is provided under the direction of the Assistant to the Dean for Undergraduate Studies, College of Engineering, University of California, Santa Barbara, California 93106. Individual faculty members are also available for help in academic program planning. One graduate adviser, and the department chairman, in conjunction with a Graduate Studies Committee, help to direct the program of studies for M.S. and Ph.D. candidates.

Bachelor of Science

Schedules should be planned to meet the requirements in General Education and in the major. Detailed descriptions of these requirements are listed in this catalog under the heading "College of Engineering," and in the separate bulletin *College of Engineering Announcement*.

Preparation for the major

The following Lower Division courses are required (91 units): Engineering 3A—B, Computer Solutions of Engineering and Science Problems; ME 10, Introduction to Engineering Mechanics; Chemistry 1A—B—C, General Chemistry; Chemistry 1AL—BL—CL, General Chemistry Laboratory; Mathematics 3A—B—C, Calculus with Applications; English 1A—B.

First Year Reading and Composition; ME 15, Statics/Strength of Materials; EE 6A—B, Circuits and Electronics; Physics 7A—B—C, Physics for Engineers; Mathematics 5A, Applied Differential Equations; Mathematics 5B, Advanced Calculus with Applications; Mathematics 5C, Calculus for Science and Engineering Students; plus 16 units of general education requirements.

Upper Division Major

Upper Division required courses are (89 units): ME 140A—B, Theoretical Analysis in Mechanical Engineering; ME 150, Introduction to Design; ME 151A—B—C, Thermosciences; ME 151L, Transport Laboratory; ME 152A—B, Fluid Mechanics; ME 155A, Control Systems Design; ME 155AL, Control Systems Design Laboratory; ME 156A, 156AL, Engineering Materials and Design Concepts; ME 156BL—CL, Design; ME 157A, Design of Optimal Systems; ME 159, Properties of Materials; ME 159L, Properties of Materials; ME 163A—B, Engineering Mechanics; ME 163L, Engineering Mechanics Laboratory; plus 9 units of departmental electives; and 25 units of general education or free electives bring total requirements to 180 units.

The Mechanical Engineering elective courses permit students a degree of specialization in the additional areas of systems engineering, biomedical engineering, ocean engi-

neering, aerospace engineering and environmental engineering.¹

Master of Science

Admission Requirements and Prerequisites

1. As in the general requirements for admission to graduate status, the department requires a bachelor's degree or its equivalent from a school or college of recognized standing.

2. Applicants with undergraduate preparation that is deemed inadequate may be required to take additional courses.

Degree Requirements

The degree is administered under Plan I and Plan II. Plan I requires 30 units of course credit approved by the departmental graduate advisor, with a minimum of 15 units in approved graduate engineering courses. The remaining credits may be chosen from 100, 200, or 500-level courses in Mechanical and Environmental Engineering or other branches of engineering, mathematics or science, as approved by the Department. Three of these 15 remaining units may be taken as independent studies for work on the thesis topic. Each student in Plan I will pursue a research project which will be approved by the Mechanical and Environmental Engineering Department, the results of which will be presented as a thesis. Students interested in design may do a design project for their thesis.

Plan II requires 36 units of course credit approved by the departmental graduate advisor, with a minimum of 24 units in approved graduate engineering courses. The remaining credits may be chosen from 100, 200, or 500-level courses in Mechanical and Environmental Engineering or other branches of engineering, mathematics or science, as approved by the Department. The Plan II program will culminate in a written comprehensive examination, in the subjects studied.

Fields of study center in the disciplines of thermal sciences, solid mechanics, fluid mechanics, materials science, engineering systems, and biomedical engineering.

Doctor of Philosophy

Admission Requirements and Prerequisites

Acceptance for admission to the Doctor of Philosophy program is subject to the general admission requirements of the Graduate Division. In addition, a Master of Science degree or its equivalent is required.

Degree Requirements

Preparation —The student must demonstrate competence in a major field by successfully passing a written examination. Competence in two minor fields, one of which may be outside the department, is also required. Completion of minor field requirements is obtained through acceptable course work performance as approved by the departmental graduate advisory committee.

Advancement to candidacy —The student will be ad-

¹ Speech 10 or 11 may be substituted for English 1B.

vanced to candidacy after completing the major and minor field requirements and an oral qualifying examination in the major field of study.

Dissertation — The emphasis in the Ph.D. program is on the ability to correlate knowledge in the pursuit of original research. The results of the research shall be successfully defended by the student in an oral examination and presented as a dissertation in accordance with the regulations of the Graduate Division.

Career opportunities

The mechanical engineering profession possesses unusual flexibility and breadth. The individual mechanical engineer is a person who applies a fundamental knowledge of physical and engineering sciences, computational techniques, engineering design and education in the humanities to the solution of many problems in contemporary society. A mechanical engineer creates, designs and carries on research in fields as diverse as biomedical engineering, transportation systems, ocean engineering, space exploration, environmental engineering, energy

conversion, the materials and petroleum industries, structural engineering and university-level education.

Teaching credentials

Either a major or a minor in Mechanical and Environmental Engineering may serve as an appropriate part of the program of studies required for a community college teaching credential in California. A student wishing to secure this credential should confer with designated counselors in the College of Engineering and in the Graduate School of Education.

Correspondence information

Undergraduate counseling: Assistant to the Dean for Undergraduate Studies, College of Engineering, University of California, Santa Barbara, California 93106.

All other correspondence: Chairperson, Mechanical and Environmental Engineering, University of California, Santa Barbara, California 93106. Phone: (805) 961-2239.

Mechanical and Environmental Engineering Lower Division courses

Engineering 3A—B • Computer Solutions of Engineering and Science Problems (3-2) Staff

Prerequisites: Mathematics 3A—B, concurrently.

Applications of computers to engineering and scientific problems. FORTRAN language programming, elements of numerical analysis, including introduction to error sources, recursion, numerical calculus, root finding, etc. Students will use the computer.

Available to lower division students in engineering, science and mathematics. Not recommended for upper division students.

10 • Introduction to Engineering Mechanics (4) Staff

Prerequisites: Engineering 3A; Mathematics 3A; Mathematics 3B may be taken concurrently.

Kinematics and dynamics of a particle. Forces and free-body diagrams. Momentum, work, energy and moment of momentum. Motion under electric, magnetic, gravitational and mechanical forces.

15 • Statics/Strength of Materials (4) Staff
Prerequisites: ME 10, Mathematics 5A may be taken concurrently

Hooke's law and properties of structural materials. Method of sections and virtual work and energy methods. Design applications to engineering structures, problems of tension, torsion, flexure and combined loading. Design beyond the elastic limit.

95 • Introduction to Mechanical Engineering (1-4) Staff
Prerequisite: Consent of instructor.

Participation in design projects in the laboratory or machine shop. Projects may be student- or faculty-originated depending upon student interest and consent of faculty member. Assistance to senior design project groups may also be acceptable with consent of the project faculty adviser. May be repeated up to six units.

Upper Division courses

Engineering 100 • Engineering Cost-Benefit Analysis (3) Staff

Prerequisite: Upper-division standing in engineering or consent of instructor.

Engineering feasibility factors and engineering economic analysis. Analysis of alternatives and estimates of demands and costs in engineering. Probability, uncertainty and risk. Environmental impact analysis. (S)

102A • Physical Oceanography (3) Lick [B2]

Prerequisite: Mathematics 5A, B, C or equivalent, ME 152A or equivalent.

Properties of sea water, basic physical principles and dynamics equations, currents with and without friction, stratified flow and thermohaline effects, waves and tides. Emphasis is on dynamics oceanography.

102B • Physical Oceanography (3) Lick [B2]

Prerequisite: ME 102A.

More advanced treatments of currents and waves, heat transfer and air-sea interactions, sediment transport and shore processes, transport of contaminants.

103 • Introduction to Marine Technology (3) Staff

Prerequisite: ME 102.

Materials and corrosion. Pressure vessel technology. Surface ships. Submerged structures. Hydrostatics and hydrodynamics, cavitation. Dynamics of underwater vehicles. Propulsion and control. Life support systems. Communication.

105 • Introduction to Statistical Thermodynamics (4) Staff

Prerequisites: ME 10 and mathematics of the Lower Division of the engineering curriculum.

Elements of quantum mechanics and classical thermodynamics; thermodynamic equilibrium and entropy. Statistical nature of thermodynamics. Maxwell-Boltzmann and Fermi-Dirac statistics. Thermodynamic properties of matter. Paramagnetism, ionization, thermionic emission, free electron theory of metals, semiconductors.

111 • Engineering Acoustics (3) Mitchell

Prerequisite: ME 152A or consent of instructor.

Fundamentals of acoustics, physics of sound waves, architectural acoustics, reverberation, acoustical properties of materials, interaction of sound and structures, outdoor sound propagation, community noise levels and sources, transportation noise, noise and vibration level criteria, measurement techniques.

112 • Energy Conversion (3) Marschall

Prerequisites: ME 151A, ME 151B concurrently, or consent of instructor.

Survey of energy resources of the earth, energy consumption, and energy conversion; resume of thermodynamics, quantum and statistical mechanics. Analysis of conventional vapor and gas cycles. Fundamentals, design and application of direct energy converters such as fuel cells, magnetohydrodynamic power generators, thermoelectric generators, thermionic generators, photovoltaic generators, Nernst effect generators, electron convection converters, electrodynamic generators, electrokinetic and piezo-electric converters.

113 • Desalination (3) Marschall

Prerequisite: ME 151A, ME 151B concurrently, or consent of instructor

Chemical and physical properties of ocean water, geothermal brine and groundwater. Fun-

damentals of theories of distillation, freezing, reverse osmosis, electrodialysis and other demineralization techniques. Design and application of desalination systems. Energy sources for desalination. Efficiency and economy of desalination plants.

114 • Water Supply and Pollution Control (3) Bruch

Prerequisite: ME 152A or consent of instructor.

Water supply and quality requirements for domestic, industrial, agricultural and recreational uses. Properties of natural surface and groundwaters. Pollutants in surface and groundwaters. Transport and fates of waterborne pollutants. Water and sewage treatment processes. Waste water reclamation. Water quality management in ground and surface water environments.

115 • Introduction to Air Pollution Principles (3) Kuby

Prerequisites: ME 151A, ME 152A—B or consent of instructor.

Adverse effects, the atmosphere, macroscale motion, meso- and micrometeorology, effluent dispersion, sulfurous smog, photochemical smog, stationary sources and their control, emission formations in gasoline-powered engines, effects of design and operating variables on gasoline-engine exhaust emissions and present and future emission control systems for gasoline engines.

125 • Special Topics in Mechanical Engineering (2-4) Staff

Prerequisite: Consent of instructor.

Individual courses each concentrating on one area in the following subjects in mechanical engineering: design, fluid mechanics, heat transfer, combustion, structural dynamics, materials, biomechanics and modern developments.

132 • Trajectory and Orbital Mechanics (3) Staff

Prerequisites: ME 10, and mathematics of the Lower Division engineering curriculum.

Fundamentals of particle dynamics, two-body and central force problems, orbit determination, transfer orbits, orbital perturbations, long-range ballistic trajectories; powered flight trajectories, re-entry dynamics, lunar and interplanetary trajectories.

140A • Theoretical Analysis in Mechanical Engineering (3) Staff

Prerequisite: Junior standing.

Introduction to the mathematical models of engineering problems and the methods of solution. Applications to practical engineering field problems. Emphasis on analytical methods for ordinary and partial differential equations.

140B • Theoretical Analysis in Mechanical Engineering (4) Staff

Prerequisite: ME 140A or consent of instructor.

Introduction to the mathematical models of engineering problems and the methods of solution. Applications to practical engineering field problems. Emphasis on numerical methods for algebraic equations, ordinary and partial differential equations, probability and statistics.

140C • Theoretical Analysis in Mechanical Engineering (3) Staff

Prerequisites: ME 140A, ME 140B or consent of instructor.

Introduction to the mathematical models of en-

gineering problems and the methods of solution. Applications to practical engineering field problems. Emphasis on advanced topics such as complex variables, calculus of variations, and integral transforms.

150 • Introduction to Design (1) Staff

Prerequisites: Four of the six courses ME 140A, B, ME 151A, B, ME 152A, B.

Introduction to the design process. Idea generation techniques: brainstorming, synectics, morphological forced connections, etc. Conceptualization of a design project in preparation for course ME 156.

151A • Thermosciences (4) Marshall

Prerequisite: Upper division standing.

The basic laws and concepts of thermodynamics such as pressure, temperature, energy and entropy are discussed and their applications to various systems are considered. Consideration is given to the molecular structure and physical properties of the solid, liquid and gaseous states. Introduction to vapor power cycles.

151B • Thermosciences (4) Marshall

Prerequisite: ME 151A.

Application of basic thermodynamic principles and laws to energy conversion systems, gas mixtures, combustion, conduction heat transfer.

151C • Thermosciences (3) Marshall

Prerequisites: ME 151B, ME 152A, ME 152B, ME 151L concurrently.

The study of the fundamentals of heat transfer using the phenomena of conduction, radiation and convection; application and analysis of steady state, transient and combined mode problems.

151L • Transport Laboratory (1) Marshall

Prerequisites: ME 151A, ME 151B, ME 151C concurrently.

Experiments in fluid mechanics, heat transfer and thermodynamics. Characteristics of heat exchangers, vapor cycles, flow in channels and over external surfaces. Direct energy conversion will be studied. Drag coefficients and heat transfer coefficients will be determined. Measuring technique for determination of flow velocity, pressure, temperature, mass and energy flow rate will be investigated.

152A • Fluid Mechanics (4) Kuby [B2]

Prerequisites: Lower Division courses in engineering, physics and mathematics.

Introduction to the fundamental concepts in fluid mechanics and basic fluid properties. Basic equations of fluid flow. Dimensional analysis and similitude. Hydrodynamics.

152B • Fluid Mechanics (3) Kuby [B2]

Prerequisite: ME 152A.

Incompressible viscous flow. Boundary-layer theory. Introductory considerations for one dimensional compressible flow.

155A • Control Systems Design (3) Staff

Prerequisites: EE 6B; ME 140B; ME 151C; ME 152B; and ME 163 or consent of instructor.

Study of linear feedback systems, transfer functions, stability, root locus, Nyquist diagrams, frequency response and state space techniques. Design and synthesis of control systems.

155AL • Control Systems Design Laboratory (1) Staff

Prerequisite: ME 155A concurrently.

Design of feedback control system; feedback compensation to meet specified design criteria.

155B • Control Systems Design (4) Staff

Prerequisites: ME 155A, AL or consent of instructor.

State space analysis of feedback control system, controllability, observability, non-linear systems, optimal control. Sampled data systems, including the design and laboratory implementation of microcomputer controlled feedback control systems.

156A • Engineering Materials and Design Concepts (2) Staff

Prerequisite: ME 159 or consent of instructor.

Selection of engineering materials, machine shop procedure, the design of machine elements, gears, journal bearings, roller bearings, fatigue failure analysis, brakes, clutches. Secondary not required of non-majors.

156AL • Engineering Materials and Design Concepts (1) Staff

Prerequisites: ME 150; concurrent enrollment in ME 156A.

Nature of engineering design. Carrying out of preliminary design. Continuation of design projects originated in ME 150. Machine shop procedures.

156BL—CL • Design (3-3) Staff

Prerequisites: ME 156A, AL.

Continuation of design projects begun in ME 156AL.

157A • Design of Optimal Systems (3) Staff [B2]

Prerequisite: Senior standing in engineering, mathematics or a mathematical science.

Application of operations research methods to the design, optimization, and use of engineering components and systems. Introduction to probability and statistical procedures and their relationship to engineering design.

157B • Design of Optimal Systems (3) Staff [B2]

Prerequisite: ME 157A.

Continuation of probability and statistical procedures. Application of computer simulation method to the design, optimization, and use of complex systems.

158 • Kinetic Theory and Statistical Thermodynamics (3) Staff

Prerequisites: ME 151A—B.

Theory, Maxwell-Boltzmann equilibrium distribution, specific heat, transport properties and quantum statistics.

159 • Properties of Materials (3) Milstein

Prerequisites: Mathematics of the Lower Division of the engineering curriculum plus concurrent enrollment in ME 159L.

Bonding in solids, crystallography, alloys, phase diagrams and diffusion. Theory of plastic deformation and fracture of metals.

159L • Properties of Materials (1) Milstein

Prerequisite: See ME 159.

Experiments in properties of materials. Plastic deformation, yield strength of alloys, annealing behavior of metals and alloys, electrical resistivity and magnetic properties.

160 • Gas Dynamics and Propulsion (3) Kuby*Prerequisites:* ME 151A—B, ME 152A—B.

Resume of fundamentals of gas dynamics, thermodynamics and combustion. Subsonic and supersonic two-dimensional flows. Method of characteristics. Normal and oblique shocks. Analysis of compressible flow through ducts, nozzles and in gas turbines, rockets and ramjets.

161 • Vibrations in Linear Systems (3) Staff*Prerequisite:* Consent of instructor.

Topics relating to vibration in mechanical systems; exact and approximate methods of analysis, matrix methods, generalized coordinates and Lagrange's equations, applications to systems with several degrees of freedom and to continuous systems.

163A • Engineering Mechanics (4) Staff*Prerequisite:* ME 10.

Kinematics and dynamics for two- and three-dimensional motion. Newton's laws, momentum, work, energy, and power. Applications to mechanisms, machine elements, dynamic balancing, and gyroscopic motion.

163B • Engineering Mechanics (3) Staff*Prerequisite:* ME 163A.

Simple harmonic oscillator, forced and coupled oscillations; transverse and longitudinal wave motions; Fourier analysis of wave motions; nonlinear oscillations.

163L • Engineering Mechanics Laboratory (1) Staff*Prerequisite:* ME 163B may be taken concurrently.

Experimental and computer design laboratory which applies the basic principles of mechanics to vibrations, orbital dynamics, structural response, wave propagation. Includes introduction to instrumentation.

166 • Advanced Strength of Materials (3) Staff*Prerequisites:* ME 15 and ME 140A.

Analysis of statically determinate and indeterminate systems using integration, area moment and energy methods. Beams on elastic foundations, curved beams, stress concentrations, fatigue and theories of failure for ductile and brittle materials. Photoelasticity and other experimental techniques are covered as well as methods of interpreting in-service failures.

Engineering 170 • Introductory Biomedical Engineering (3) Staff*Prerequisite:* Senior standing in engineering, or consent of instructor.

Survey of application of engineering principles and methods to problems arising in the life sciences (medicine and biology); analysis of the function and principles of operation of living systems; modeling and simulation of physiological regulatory systems; physiological philosophy of instrument design, etc.

185 • Materials in Engineering (3) Milstein*Prerequisites:* Upper division standing in Engineering or consent of instructor.

Materials science and engineering in the solution of today's complex technological problems. A team of six faculty lecture on various aspects

of this topic, which emphasize applications of materials, materials production techniques, and environmental effects on materials.

195 • Directed Research (1-4) Staff*Prerequisite:* Consent of instructor.

Directed research projects open to qualified undergraduates in Mechanical Engineering or related fields. Research projects are to be arranged by student and staff member. The course is designed to give highly qualified undergraduates early experience in research. Not acceptable for required departmental electives.

***199 • Independent Studies in Mechanical Engineering** (1-5) Staff*Prerequisite:* Consent of instructor.

Directed individual study, normally experimental. Open to qualified students who have upper division standing in Mechanical Engineering courses.

Graduate courses

200 • Professional Seminar (1) Staff*Prerequisite:* Graduate standing.

A series of weekly lectures given by University staff members and outside experts in the fields of research or development pertinent to mechanical engineering.

201 • Advanced Dynamics (3) Vanyo*Prerequisite:* ME 163A,B,L or equivalent.

Advanced dynamics of mechanical systems, variational techniques, Hamilton's principle, Lagrange's equations, conservation theorems, matrix kinematics and dynamics of rigid bodies in general motion.

202 • Advanced Dynamics (3) Miller*Prerequisite:* ME 201 or consent of instructor.

Advanced dynamics of electromechanical systems, Hamilton's principle and Lagrange's equations generalized to electrical networks, analysis of electromechanical transducers, frequency response, introduction to canonical transformations, Hamilton-Jacobi equations.

203 • Nonlinear Mechanics (3) Staff*Prerequisite:* ME 201.

Phase plane analysis, criteria of stability, study of Van der Pol, Duffing, Mathieu equations, Poincare-Bendixson theorem, method of Krylov-Bogoliuboff, equivalent linearization perturbation methods.

214 • Rotation of Nonrigid Bodies and Fluids (3) Vanyo*Prerequisites:* ME 201 and ME 221 or consent of instructor.

Kinematics and dynamics of general rigid body motion. Extension to nonrigid bodies. Effects of energy dissipation on satellite attitude stability. Navier-Stokes equations in rotating coordinates and vorticity coordinates. Precessing boundary layer theory. Mixed system inertia tensors.

216 • Stochastic Dynamics (3) Staff*Prerequisite:* ME 201.

Analysis of systems having stochastic solutions or inherent random parameters. Measure-

ment and analysis of random data; stationary, ergodic and nonstationary random processes; power spectra, analog and digital data processing, filtering; Monte Carlo methods, stochastic stability, Fokker-Planck equation. Application to random vibration, earthquake excitation and ocean wave excitation.

219 • Continuum Mechanics (3) Staff*Prerequisites:* ME 152A—B or equivalent.

Matrices and tensors, stress deformation and flow, compatibility conditions, constitutive equations, field equations and boundary conditions in fluids and solids, applications in solid and fluid mechanics.

220 • Inviscid Flow (3) Bruch*Prerequisite:* Consent of instructor.

Two-dimensional and axisymmetric flows. Stream functions. Vorticity and circulation. Stokes, Gauss, vortex theorems. Irrotational motion. Velocity potential. Basic solutions and superpositions; distributed singularities. Conformal mapping.

221 • Viscous Flow (3) Vanyo*Prerequisite:* ME 220.

Navier-Stokes equations, vorticity equation. Exact solutions. Flow at low (Stokes, Oseen) and at high Reynolds number. Boundary layer equations, similarity solutions, approximate solutions, numerical methods. Stability of laminar flows and transition to turbulence.

222 • Compressible Flow (3) Staff*Prerequisites:* ME 151A—B or equivalent, ME 219.

Review of one-dimensional and oblique shock waves. Prandtl-Meyer expansion. Method of characteristics for two-dimensional steady, one-dimensional unsteady and axisymmetric flow. Crocco's theorem. Viscous compressible boundary layer.

224 • Physical Gas Dynamics (3) Kuby*Prerequisites:* ME 222 and ME 251.

Behavior of equilibrium and nonequilibrium gas flows at very high temperatures including vibrational, translational, chemical and radiative effects.

225 • Special Topics in Mechanical Engineering (3) Staff*Prerequisites:* Advanced background and consent of instructor.

Individual courses, each concentrating on one of the following subjects in fluid and solid mechanics: boundary layers, turbulent flow, real fluids, physical gas dynamics, plasma dynamics, combustion, gyro dynamics, structural dynamics, stability, materials, biomechanics, modern developments.

226 • Applied Numerical Methods for Engineering (3) Bruch*Prerequisites:* ME 140A—B or consent of instructor.

Solution of equations and systems of algebraic equations. Finite difference, weighted residuals and finite element methods for the solution of partial differential equations. An introduction to variational inequalities.

234A—B • Structural Dynamics (3-3) Miller*Prerequisite:* ME 163A,B,L or equivalent.

Behavior of elastic systems, system con-

*See N2 for 198/199 independent studies unit limitations.

straints, normal modes, virtual work method, generalized coordinates, Lagrange's equations, influence functions, matrix methods, damping, frequency response, random excitation.

235A—B • Quantum Mechanics (3-3) Mitchell

Prerequisite: Consent of instructor.

Basic particle quantum mechanics, state vectors, mathematical and physical development, solutions of Schrödinger's equation, one-dimensional applications, two state systems, spin, Heisenberg's formulation, fundamental dynamics, angular momentum, three-dimensional applications, perturbation theory, identical particles, radiation.

239 • Conduction Heat Transfer (3) Marshall

Prerequisite: Undergraduate course in heat transfer.

Development of mathematical representation of conduction heat transfer and techniques available for analytical, analog and numerical solutions.

240 • Convective Heat Transfer (3) Marshall

Prerequisite: Undergraduate course in heat transfer.

Solutions to the momentum, continuity and energy equations will be considered for both natural and forced convection. Applications to industrial problems, convective transfer in high-speed flows, heat transfer in rarefied flows and the effects of chemical reactions on convective rates will be included.

241 • Radiative Energy Transfer (3) Yuen
Prerequisite: Undergraduate course in heat transfer.

The physical nature of radiation and of its interaction with matter, conservation principles in radiative transfer and their relation to molecular and convective processes, and thermodynamic equilibrium with consideration of nondimensional parameters will be considered. Applications to astrophysics, combustion and plasma technology will be discussed.

250 • Advanced Thermodynamics (3) Yuen
Prerequisites: ME 151A—B.

An extended treatment of the fundamentals of classical thermodynamics, including availability and reversibility, the chemical potential properties of matter, thermochemistry, chemical equilibrium of real gases and gas mixtures.

251 • Statistical Thermodynamics (3) Mitchell

Prerequisites: ME 151A—B.

An extended treatment of the fundamentals of statistical thermodynamics, equilibrium distributions, properties of gases, liquids and solids.

257 • Optimization of Engineering Design (3) Vanyo

Prerequisites: ME 157A—B or equivalent.

Analytical and computer optimization techniques applied to engineering designs and systems. Includes advanced topics in operations research and computer simulation methods integrated with classical optimization techniques of calculus and numerical methods. Individual projects will be assigned to apply optimization techniques to an engineering design or system in an area where the student is already technically competent.

260A—B • Engineering Materials (3-3) Milstein

Prerequisite: Graduate standing in engineering or consent of instructor.

Introduction to modern concepts in materials science, application of solid state and thermodynamic theory to the study of properties of materials of technological interest. Elastic and plastic deformation, imperfections, alloying theory, paramagnetism and ferromagnetism, thermal properties of materials (specific heat, electron emission), superconductivity.

261A—B—C • Seminar in Materials Research (2-2-2) Milstein

Prerequisite: Consent of instructor.

Seminars on research subjects of current interest in electrical, magnetic, mechanical and thermal properties of materials. Student participation in presentation of seminars. May be repeated.

270 • Seminar in Biomedical Engineering (2) Roemer

Prerequisite: ME 271B or consent of instructor.

Seminar on the application of engineering principles to medical problems and physiological processes. Consideration of advanced topics depending on student and faculty interests, e.g., modeling and simulation of physiological systems, biomechanics, rehabilitation engineering. Clinical and laboratory facilities will be utilized when appropriate. Student participation in presentation of seminar. May be repeated.

Engineering 270A—B—C • Physiological Basis of Biomedical Engineering (3) Horvath

Prerequisites: Undergraduate courses in controls systems or consent of the instructor.

Provides an intensive presentation of the physiology of a single organ system and the application of this knowledge to engineering concepts. Systems covered will vary with student interest. Examples are the cardiovascular, respiratory, renal, endocrine, metabolism or transport system.

271A • Transport Phenomena in Biomedical Engineering (3) Roemer

Prerequisites: Graduate standing in engineering, ME 170A, Zoo 40, or consent of instructor.

Consideration of the transport phenomena (heat, mass, momentum, and electric charge) in the major physiological systems (cardiovascular, respiratory, metabolic, and nervous) and associated engineering devices. Emphasis on the physical basis of the transport processes and the mathematical description of those processes.

271B • Engineering Analysis of Physiological Control Systems (3) Roemer

Prerequisites: ME 271A, ME 155A or equivalent, or consent of instructor.

Analysis of several of the major physiological control systems from the engineering viewpoint. Emphasis on mathematical modeling and analysis of selected subjects from: temperature regulation, cardiovascular control, respiration, neuromuscular control systems and other systems of interest.

594AA—ZZ • Special Topics (1-4) Staff

Prerequisite: Graduate standing.

595AA—ZZ • Group Studies (1-4) Staff

Prerequisite: Graduate standing.

596AA-ZZ • Group Studies (2-6) Staff

Prerequisite: Graduate standing and consent of instructor.

Individual tutorial. Instructor usually student's major professor. A written proposal for each tutorial must be approved by the Department Chairman and filed with the Graduate Division.

597 • Individual Study for Master's Comprehensive Examinations and Ph.D. Examinations (1-12) Staff

Prerequisite: Graduate standing.

598AA—ZZ • Master's Thesis Research and Preparation (1-12) Staff

Prerequisite: Graduate standing.

599AA—ZZ • Ph.D. Dissertation Research and Preparation (1-12) Staff

Prerequisite: Graduate standing.

English

Professors

- Edgar Bowers, Ph.D., *Stanford University; English and American Poetry.*
- John Carroll, Ph.D., *Harvard University; eighteenth century literature, modern novel (Chairperson).*
- William Frost, Ph.D., *Yale University; English and comparative literature.*
- Donald L. Guss, Ph.D., *University of Wisconsin; English literature, 1500-1660, Italian Petrarchism, renaissance literary history.*
- Edward Loomis, Ph.D., *Stanford University; creative writing, American literature, film production.*
- ⁴Patrick J. McCarthy, Ph.D., *Columbia University; nineteenth-century English literature, the novel.*
- ¹Vivian Mercier, Ph.D., *Trinity College, Dublin; Anglo-Irish literature, French-Irish literary relations.*
- Marvin Mudrick, Ph.D., *UC Berkeley; Chaucer, fiction.*
- Donald Pearce, Ph.D., *University of Michigan; romantic poets, W.B. Yeats.*
- John Ridland, Ph.D., *Claremont Graduate School; writing, poetry, teaching of writing and poetry.*
- Mark Rose, Ph.D., *Harvard University; Shakespeare, science fiction.*
- ⁴Herbert N. Schneidau, Ph.D., *Princeton University; modern literature, the Bible.*
- ⁴Alan Stephens, Ph.D., *University of Missouri; poetry, modern English and American literature.*
- Garrett Stewart, Ph.D., *Yale University; nineteenth century English literature.*
- Garth St. Omer, Ph.D., *Princeton University; modern fiction and creative writing.*
- ¹Homer Swander, Ph.D., *University of Michigan; Shakespeare, modern drama.*
- Lawrence Willson, Ph.D., *Yale University; Puritanism and pornography: tales of human frailty and sorrow. (emeritus, recalled)*

Associate Professors

- H. Porter Abbott, Ph.D., *University of Toronto; the novel.*
- Steven Allaback, Ph.D., *University of Washington; American literature, creative writing.*
- Sheridan Blau, Ph.D., *Brandeis University; seventeenth-century literature, English education.*
- Robert A. Erickson, Ph.D., *Yale University; seventeenth and eighteenth-centuries.*
- Frank C. Gardiner, Ph.D., *University of Oregon; English literature, medieval studies.*
- ²Eloise Hay, Ph.D., *Harvard University; modern English and American literature.*
- Richard Helgerson, Ph.D., *Johns Hopkins University; Shakespeare, the English renaissance.*
- William S. Marks III, Ph.D., *Stanford University; nineteenth-century American fiction, modern British and continental fiction.*
- Stephen J. Miko, Ph.D., *Yale University; modern novels.*

- Michael W. O'Connell, Ph.D., *Yale University; renaissance poetry and drama.*
- H. Daniel Peck, Ph.D., *University of Iowa; American literature.*
- Logan H. Speirs, M.A., *Cambridge University; English and comparative literature.*
- Thomas R. Steiner, Ph.D., *Columbia University; seventeenth and eighteenth century literature.*
- Everett Zimmerman, Ph.D., *Temple University; eighteenth-century satire, the novel.*

Assistant Professors

- ³Lee Bliss, Ph.D., *University of California, Berkeley; Renaissance literature, drama.*

Lecturers

- Elliott Evans, M.A., *University of Chicago; Afro-American literature, contemporary European literature, teaching methods and approaches to teaching expository writing.*
- Michael A. Fernandez, M.A., *California State University, San Francisco; writing - fiction/non-fiction, creative writing.*
- Anne Pidgeon, M.A., *University of Michigan; Freshman English.*
- Douglas Tedards, D.A., *University of the Pacific, Freshman English, Visiting Lecturer*

Professors Emeriti

- Joseph Foladare, Ph.D., *Yale University.*
- J. Chesley Mathews, Ph.D., *UC Berkeley.*
- Douwe Stuurman, B. Litt., *Oxford University.*

¹Absent on leave, Fall 1980

²Absent on leave, Winter 1981

³Absent on leave, Spring 1981

⁴Absent on leave, 1980-81

Concerns of the department

The Department of English (1) provides all undergraduates with the opportunity for developing college-level skills in prose composition and in the critical reading of a variety of texts through the 1A and 1B courses; (2) makes available to all students a wide range of courses that may be taken for credit as electives; (3) offers a major leading to the Bachelor of Arts degree; (4) offers graduate programs leading to the M.A. and Ph.D. degrees; and (5) collaborates with other departments in the following major programs: Comparative Literature, Film Studies, Medieval Studies, Renaissance Studies, and Environmental Studies, in the College of Letters and Science and the literature program in the College of Creative Studies.

The English Major

The English major is a structured program of English courses and related studies from which a student may acquire a sound and orderly knowledge of our literature and the wisdom and exhilaration in it. The major aims to develop in a student a poised critical sense and some ability in graceful and efficient expression.

Counseling: Students will be assigned an undergraduate faculty adviser at the time of declaring the English major. Non-majors seeking information about the English major may arrange appointments with advisers through the English Department's Undergraduate Secretary.

Students interested in a major in Comparative Literature (English plus a foreign literature) may consult specially designated undergraduate advisers in the English Department.

Career Opportunities:

Contrary to what many believe, most English majors do not become English teachers. Some do prepare for teaching careers, of course, but most enter professions and business and government work which call upon their skills in verbal communication and analysis. Because the ability to write precisely and effectively remains in demand, English majors find a wide range of careers open to them. English is one of the best preparations for law school. Journalism, publishing, public relations and advertising are other areas where English majors may find relevant employment. Government and business also continue to need "communication specialists." The potential employment for English majors, in fact, extends as widely as the uses to which the English language has been put.

Bachelor of Arts

Preparation for the major

Required, with an average grade of C or higher:

English 1A—1B

English 10, 20, 30, 40

One course from: Classics 36, 37, 38, 102, Comparative Literature 30A, English 38.

History 4A—B—C (Upper division majors may satisfy this requirement by substituting one of the following sequences—History 111A—B, 113A—B, 115-116, 140A—B, 141A—B).

Foreign Language Requirement—Complete either Option 1 or 2 below:

Option 1: Complete the sixth course or its equivalent in Greek, Latin, French, German, Italian, Russian, or Spanish.

Option 2: Complete five literature-in-translation courses, of which three must be upper division. (Film courses do not apply to this requirement.) Students who elect Option 2 must do so by petition and must consult with a departmental adviser by the end of their sophomore year.

In choosing between these options, students should keep in mind that election to Phi Beta Kappa requires Option 1. Students contemplating graduate study should consult their prospective graduate schools to determine if specific languages are required for those schools.

Upper division major

Required: 40 upper division units in English, including 20 units in the following courses:

English 117A—B (Shakespeare)

English 152A (Canterbury Tales)

English 162 (Milton)

English 197 (Senior Seminar)

The remaining 20 units of electives must be chosen from upper division courses in the English Department. English 102A—B—C, 106 and 117E will not apply to this requirement.

Recommended: History 140A—B (History of England) is strongly recommended for all English majors.

Creative Writing program

The English Department offers two courses in creative writing open to *all* interested students—English 41 and English 101. English 103 and 104 are open to all upper-division students with the *consent of the instructor*. In addition, the Department offers English 105, a seminar in creative writing, for *selected* upper division students. Those wishing to be admitted to the seminar should submit samples of their work to the Creative Writing Committee.

Graduate program

The Department requests that applicants submit a paper written in an upper division English course with their applications.

The Department requires that the candidate present both Aptitude scores and Advanced scores in English literature on the Graduate Record Examination.

I. Requirements for the Degree of Master of Arts

A. Courses:

Plan A (The Department welcomes applications from those who wish to advance their knowledge of English and American Literature for personal or professional reasons, but do not plan to continue to the Ph.D. Students may apply concurrently to the Single Subject Credential program.) 36 units, including a minimum of 28 graduate units of which no more than 8 may be in 297 and, with permission of the Graduate Committee, no more than 4 in 596. Required courses are English 200; and English 110 or 111 or 206 or 207, or their equivalent.

Plan B (for students who have been admitted to the program leading to the Ph.D.) Same as Plan A except that all 36 units must be in graduate courses. All students must plan their programs in consultation with their Graduate Adviser. Programs should not be filed without the Adviser's approval.

B. Examinations:

1. Language: Students must consult with the Graduate Adviser for Languages before taking an examination. All candidates must pass, as early as possible and in no case later than one quarter before receiving the M.A., an exami-

nation in French, German, Italian, Russian, Spanish, Latin or Greek. The Department requires the ETS examination where available. (A special examination may be administered in cases where the ETS is not available.) Another language may be substituted with the consent of the Graduate Committee and the Graduate Dean.

2. Oral Examinations:

Plan A: The candidates must pass, ordinarily during the quarter in which they expect to receive the M.A., but in no case later than the end of the seventh quarter in residence, an oral examination of approximately one hour, in which they should expect that major authors, genres, and literary periods will be covered. In consultation with the examination committee, the candidate will prepare a list of texts, at least one quarter before the requested date of the examination, for the approval of the Graduate Committee. A candidate whose educational objectives have changed since admission to graduate study and whose record provides the justification may be permitted to take the Plan B oral examination; to do so, permission must be received from the Graduate Committee.

Plan B: The candidates must pass, at the same point in their progress, essentially the same kind of oral examination as that described above, except that, since it will serve as the first qualifying examination for the Ph.D., it will be more extensive; it will last approximately two hours. The examining committee will make one of the following recommendations: (1) Fail; (2) Pass as M.A. candidate, but without recommendation to continue; (3) Pass, with recommendation to continue. In all cases, recommendations are passed on to the Graduate Committee, which determines, on the basis of the entire record, whether the student will be permitted to continue in the program.

Students must consult with their Graduate Adviser before requesting any qualifying oral examination.

II. Requirements for the Degree of Doctor of Philosophy

A. Completion of the M.A. degree under Plan B.

Candidates who enter with M.A. degrees from other institutions must pass the first qualifying oral examination (described above, under Oral Examinations, Plan B); they may request the examination as early as their first quarter in residence, but in no case later than the end of their first year. For the language requirement, a student entering with an M.A. degree from another institution must supply an ETS score or submit to re-examination no later than one quarter before requesting the first qualifying examination.

B. Courses:

24 graduate units beyond the M.A. must be taken prior to the second qualifying examination. The Graduate Committee will accept no more than 8 approved units of 297 and 8 approved units of 596.

C. Examinations:

I. Language: Students must consult with the Graduate

Adviser for Languages before taking an examination. Before being advanced to candidacy, the students must fulfill either language option (a) or language option (b) or language option (c):

Language option (a): An examination testing the student's ability to read a plain prose text in any three of the following languages: French, German, Italian, Russian, Spanish, Latin, Greek, or Old English. The Department requires the ETS examination where it is available. (A special examination may be administered in cases where the ETS is not available.) In the case of Old English, two quarters of course work with a grade of B or better may substitute for the examination. After such examinations, the student will be expected to demonstrate an advanced knowledge of one of these languages, based on an acquaintance with a major literary text or group of texts in the original. This requirement may be satisfied by passing within five years prior to advancement to candidacy, with a grade of B or better, an upper division or graduate literature course in the language. In the case of Old English, a third quarter's work, with a grade of B or better, will satisfy the requirement.

Language option (b): A demonstration of advanced knowledge of two languages (one of which may be Old English if the Graduate Committee consents). These languages shall have some relevance to a proposed course of doctoral study. Advanced knowledge will be demonstrated as in language option (a).

Language option (c): In certain cases, with the advice of the Graduate Adviser for Languages and the approval of the Graduate Committee, a student who can read one foreign language fluently will be permitted to satisfy the language requirement by demonstrated ability to translate and interpret a wide range of literary texts in that language. Completion of option (b) in that language and a written examination will normally be required.

The student must satisfy the language requirement before taking the second qualifying oral examination.

2. Oral Examination: The second qualifying examination of approximately two hours (oral) or eight hours (written) will cover three areas of concentration: periods (*e.g.*, the eighteenth century), individual authors (*e.g.*, Shakespeare), or special topics (*e.g.*, theories of poetry). In consultation with the examination committee, the candidate will prepare a list of texts, at least one quarter before the requested date of the examination, for the approval of the Graduate Committee. The intended dissertation field will constitute one area of questioning. Hence a 2-3 page description of the student's proposed dissertation topic should be submitted to the Graduate Committee Chairman at least two weeks prior to the date of taking the second qualifying examination. The description will be made available to the examination committee. The object of this part of the examination is to explore the proposed dissertation topic and its "area" with the student, to make suggestions concerning its feasibility, and to assist the candidate to begin work upon it at an earlier date than might otherwise be the case. All candidates must take this examination no later than the end of their fourth year of residence.

D. The Dissertation:

To insure that the graduate faculty is aware of and supports the topic of a student's dissertation research, the student must submit a prospectus to the Graduate Committee for its consideration and formal acceptance. This prospectus should be submitted after the student has passed the second qualifying examination, discussed it with the director, and secured approval. When the Graduate Committee has accepted the prospectus, the student will be notified, and a copy of the prospectus will be placed on file with the graduate secretary. If the dissertation committee recommends, the completed work will be defended in an oral examination.

Teaching credentials

The Department of English in cooperation with the Graduate School of Education offers a three-quarter program of studies leading to a secondary school teaching credential in English. Students wishing to earn an M.A. in English in conjunction with the English teaching credential may apply to both programs concurrently and should be prepared to

spend five or six quarters of study for their joint completion.

Students completing a major in English or in a related field who wish to pursue a teaching career in English at the secondary school level are encouraged to consult the department's credential adviser early in their senior year. Please note: Linguistics 160 is required for all secondary credential candidates in English. Additional information on other credential programs is available in the Education-Advising Office of the Graduate School of Education, Room 1180, Phelps Hall.

English majors interested in teaching at the elementary level or in subjects other than English should seek credential counseling well before their senior year from the Education-Advising Office of the Graduate School of Education, Room 1180, Phelps Hall.

Correspondence information

Correspondence may be addressed to the Department of English, University of California, Santa Barbara, California 93106. Telephone: (805) 961-3441.

English

Lower Division courses

A more detailed description of English courses (and texts) for the next term is normally available during pre-enrollment in the English Department office. Ask for the Course Outline Booklet.

English 1A and 1B or their equivalents are prerequisites to all other English courses!

1A—1B • First Year Reading and Composition (4-4) [A]

Prerequisite: Satisfaction of Subject A requirement. 1A is a prerequisite to 1B.

English 1A: will be devoted to non-fictional prose and prose fiction, with heavy emphasis on expository writing.

English 1B: will be devoted to poetry and drama and continued emphasis on expository writing

FS • Freshman Seminar (4)

Students interested in taking Freshman Seminar should consult the Department's *Course Outline Booklet* for their availability.

10 • Introduction to the Study of Poetry (4) [D]

An introduction to the critical reading of poetry. Continuing emphasis will be placed on developing writing skill in 10, 20, 30, 40.

20 • The Literature of the Renaissance (4) [D]

An introduction to the literature of the English Renaissance stressing such works and authors as Marlowe, Jonson, Webster, Spenser, Donne, Marvell, and Bacon's essays. English 20 should normally be taken before English 30 and 40. Continuing emphasis will be placed on developing writing skills in 10, 20, 30, 40.

30 • The Literature of the Restoration and Eighteenth Century (4) [D]

An introduction to the literature of the period 1660-1800 stressing such works and authors as Dryden, Pope, Richardson, Fielding, Congreve, and Boswell's life of Johnson. English 30 should normally follow English 20 and precede English 40. Continuing emphasis will be placed on developing writing skills in 10, 20, 30, 40.

38 • World Literature—Ancient (4) [D]

Reading in translation of selected authors, such as Homer, the Greek dramatists, Plato, Virgil. Satisfies English major requirement in Classics.

39 • World Literature—Medieval through Eighteenth Century (4) [D]

Reading in translation of selected authors such as Dante, Cervantes, Montaigne, Voltaire. Helps to fulfill the English major requirement in Foreign Language (Option 2).

40 • The Literature of the Nineteenth Century (4) [D]

An introduction to the English literature of the period 1800-1900 stressing such works and authors as Wordsworth, Byron, Shelley, Keats, Arnold, Tennyson, and *Wuthering Heights*. English 40 should normally be taken after English 20 and 30. Continuing emphasis will be placed on developing writing skills in 10, 20, 30, 40.

41 • Creative Writing (4) [D]

Writing in such forms as the short story, poetry, and fiction.

42 • Practice in Writing (4) [D]

A course in how to write non-fictional prose.

Upper Division courses

101 • Creative Writing (4) [D]

Writing in such forms as the short story, poetry and fiction.

102A—B—C • Major British Writers (4-4-4) [D]

For upper division minors and other non-majors. Not to be counted toward the English major.

102A: Chaucer through Milton.

102B: Dryden through Keats. (*102A is not prerequisite to 102B.*)

102C: Tennyson to the present. (*102B is not prerequisite to 102C.*)

103 • Writing of Fiction (4) [D]

Prerequisite: Consent of instructor. May be repeated for credit up to 12 units.

104 • Writing of Verse (4) [D]

Prerequisite: Consent of instructor.

All forms. May be repeated for credit up to 12 units.

105S—SP—SF • Seminar in Creative Writing (4-4-4) [D]

Prerequisite: Consent of Creative Writing Committee.

105S • Seminar in Creative Writing — various forms

105SP • Seminar in Creative Writing — poetry

105SF • Seminar in Creative Writing — fiction
May be repeated for credit up to 12 units.

106 • Writing of Non-Fictional Prose (4) [D]

The writing of non-fictional prose. May be used to satisfy the State requirement of an upper division expository writing course for Elementary and Secondary teaching credentials. Credential

candidates may be exempted from the writing requirement by examination. May not be counted toward the English major. May be repeated for credit up to 12 units.

107 • Practical Criticism (4) [D]

Prerequisites: 24 units in English; English major or minor.

A combined writing and criticism course for advanced students of literature and prospective English teachers; special attention given to teaching others to write. Recommended for prospective teachers of English.

111 • The History of the English Language (4) [D]

The structure and vocabulary of English from its earliest recorded forms to the present.

113 • Literary Theory and Criticism (4) [D]

Exploration of the critic's methods and objectives; study of selected major critical documents from Aristotle to the present.

115 • Medieval Literature (4) [D]

English and Continental literature through the fifteenth century, exclusive of the *Canterbury Tales* but including such works as *Beowulf*, *Morte d'Arthur*, *Sir Gawain and the Green Knight*, and selected romances and lyrics.

116 • The English Bible as Literature (4) [D]

Reading of selected texts from the Old and New Testaments using a variety of modern approaches.

117A • Shakespeare, Poems and Earlier Plays (4) [D]

Major poems and plays of Shakespeare, 1593-1602, including such works as the Sonnets, *Hamlet*, *A Midsummer Night's Dream*, *Henry the Fourth*, *Twelfth Night*.

117B • Shakespeare, Later Plays (4) [D]

Prerequisite: 117A.

Major works of Shakespeare from 1603-1613; such plays as *King Lear*, *Macbeth*, *Antony and Cleopatra*, *Othello*, *Tempest*.

117C • Shakespeare, Advanced Studies (4) [D]

Prerequisite: 117A-B. Also offered for three units, with no prerequisite, as a field course in England in conjunction with Dramatic Arts 117. It may then be used toward satisfying the departmental requirement for majors.

117D • Shakespearean Renaissance Academy (8) [D]

(Summer Session only).

An intensive course in Shakespeare and the Renaissance hosted by the Institute of Renaissance Studies at Ashland, Oregon. Of the eight units credit, four may be used to satisfy English 117A—117B.

117E • Shakespeare (4) [D]

For non-majors.

120 • Modern Drama (4) [D]

European and American drama from Ibsen to the present.

124 • Readings in the Modern Short Story (4) [D]

Consult the Course Outline Booklet in the English Department Office for the authors read in any particular quarter

126A • Survey of British Fiction (I) (4) [D]

The eighteenth century. Such writers as Defoe, Richardson, Fielding, Smollett, and Sterne.

126B • Survey of British Fiction (II) (4) [D]

The nineteenth century to 1850. Such writers as Austen, the Brontës, Thackeray, Dickens (earlier novels).

126C • Survey of British Fiction (III) (4) [D]

The nineteenth century from 1850. Such writers as Dickens (later novels), Eliot, Trollope, and Hardy.

126D • Survey of British Fiction (IV) (4) [D]

The twentieth century. Such writers as Conrad, Joyce, Lawrence, Forster, Virginia Woolf, Huxley.

128 • Autobiography (4) [D]

Detailed readings of autobiographical writings in various modes. Such writers as Franklin, Douglass, Mailer, Trollope, Mill, Rousseau. To see what is being taught any particular quarter, students should consult the Department's *Course Outline Booklet*.

130A • Major American Writers to Civil War (4) [D]

Such writers as The Puritans, Edwards, Franklin, Emerson, Thoreau, Poe, Hawthorne, Melville, and Whitman.

130B • Major American Writers from Civil War to 1917 (4) [D]

Such writers as Whitman, Dickinson, Twain, Howells, James, Crane, Chopin, Dreiser, and Norris.

130C • Major American Writers from 1917 to Present (4) [D]

Such writers as Frost, Eliot, Pound, Hemingway, Fitzgerald, Faulkner, Steinbeck, O'Connor, and Bellow.

131 • Special Studies in American Literature (4) [D]

A special studies course in American literature. Topics will vary from quarter to quarter. To see what is being taught any particular quarter, students should consult the Department's *Course Outline Booklet*. May be repeated with permission of department chairman.

132A—Z • Studies in American Writers (4) [D]

Courses in individual American Writers such as Hawthorne, Melville, Twain, Whitman, Dickinson, Henry James, Hemingway, and Faulkner.

133A • Literature of the American South (Exclusive of Faulkner) (4) [D]

Such writers as Cable, Twain, Glasgow, Caldwell, McCullers, O'Connor, Welty.

133B • Literature of California and the

West (4) [D]

Such writers as Dana, Harte, Norris, Grey, Rolvaag, Cather, Steinbeck.

133D • American Jewish Literature (4) [D]

Such writers as Henry Roth, Philip Roth, Wallant, Bellow, Singer, Malamud, Salinger.

135 • The Puritan Tradition in American Literature (4) [D]

The development of the main ideas of American Puritanism.

137 • Major American Poets (4) [D]

Such poets as Whitman, Dickinson, Frost, Williams, Crane, Stevens,

138A • American Fiction Before 1860 (4) [D]

Such writers as Brockden Brown, Irving, Cooper, Hawthorne, Melville, Poe.

138B • American Fiction, 1860-1917 (4) [D]

Such writers as Howells, James, Twain, Norris, Crane, Chopin, Dreiser, London.

138C • American Fiction After 1917 (4) [D]

Such writers as Fitzgerald, Hemingway, Faulkner.

141 • American Literature and the American Environment (4) [D]

A study of the literary response to the American landscape. Readings and discussions of various American novelists, poets and prose writers.

For other courses in American literature see 188, 189, 190, 191.

144 • The European Renaissance (4) [D]

Such authors as Petrarch, Boccaccio, Rabelais, Montaigne, Erasmus, More and Machiavelli. *Helps to fulfill the English major requirement in Foreign Language (Option 2).*

145 • Special Studies in English Renaissance Literature (4) [D]

A special studies course in the English literature of the period from 1500 to 1660. Topics will vary from quarter to quarter. To see what is being taught in any particular quarter, students should consult the Department's *Course Outline Booklet*. May be repeated with permission of department chairman.

146 • English Renaissance Verse and Prose (4) [D]

An Upper Division survey of English non-dramatic verse and prose from the years 1500 to 1660. Such writers as Herbert, Donne, Marvell, Jonson, Sir Thomas Browne.

147 • British Fiction Since 1900 (4) [D]

Such writers as Conrad, Joyce, Lawrence, Forster, Virginia Woolf, Huxley.

149 • Gaelic Backgrounds to Anglo-Irish Literature (4) [D]

Translations of poetry, folktales, sagas and mythological works from early and modern Irish. These will be read both for their own fascination and for their influence on such writers as Yeats, Joyce, Synge and O'Casey.

150 • Anglo-Irish Literature (4) [D]

A Study of 20th-century Irish literature written in English against a background of Irish history during the struggle for independence and later. Major emphasis on Yeats, Joyce, Synge and O'Casey; other writers of the period, such as Stephens, O'Flaherty, O'Connor and Behan will also be touched on.

151A—Z • Studies in British Writers (4) [D]

Course in individual writers such as Spenser, Donne, Jonson, Dryden, Pope, Swift, Richardson, Fielding, Johnson, Blake, Wordsworth, Dickens, Lawrence and Yeats.

152A • Chaucer: Canterbury Tales (4) [D]**152B • Chaucer: Troilus and Criseyde and the Minor Poems (4) [D]****153 • Yeats, Pound, Eliot (4) [D]****154 • British and American Verse Since 1900 (4) [D]**

A course in British and American verse since 1900. May be repeated for credit with the permission of the Chairman.

155 • The Symbolist Movement (4) [D]

A course on the symbolist movement in France and England.

157 • English Renaissance Drama (4) [D]

A course in the English drama of the period from 1500 to 1642, excluding Shakespeare. Such writers as Marlowe, Jonson, Dekker, Heywood, and Webster.

162 • Milton (4) [D]**165AA—ZZ • Special Topics in Literature (4) [D]**

Studies of topics not limited to a specific author, period or literary form. Specific course titles will be announced prior to the beginning of each quarter. Course may be repeated an unlimited number of times, provided the letter designations are different. Only eight units of major credit will be allowed. Recent topics have included detective fiction, women writers, the existentialists, and religion and poetry.

168 • Restoration and Eighteenth Century Verse and Prose (4) [D]

Non-dramatic works by such writers as Dryden, Pope, Swift, Cowper, Gray, Johnson and Boswell.

169 • Restoration and Eighteenth-Century Drama (4) [D]

Such dramatists as Dryden, Etherege, Wycherley, Congreve, Sheridan.

170 • The Age of Satire (4) [D]

Donne, Rochester, Dryden, Swift, Pope, Johnson.

172 • Special Studies in the Enlightenment (4) [D]

A special studies course in the neo-classical literature of England and the Continent. Topics will

vary from quarter to quarter. To see what is being taught in any particular quarter, students should consult the Department's *Course Outline Booklet*. May be repeated with permission of department chairman.

177 • The Age of Romanticism (4) [D]

English and Continental literature of the Romantic Movement.

178 • Nineteenth-Century Prose (4) [D]

Romantic and Victorian writers, such as Coleridge, Hazlitt, Arnold, Carlyle.

179 • British Romantic Writers (4) [D]

Such writers as Blake, Wordsworth, Coleridge, Byron, Keats, Shelley, Lamb and Hazlitt.

180 • The Victorian Era (4) [D]

Such writers as Browning, Tennyson, Hopkins, Hardy, and the Pre-Raphaelites.

181 • Special Studies in the Nineteenth Century (4) [D]

A special studies course in the Romantic and Victorian periods. Topics will vary from quarter to quarter. To see what is being taught any particular quarter, students should consult the Department's *Course Outline Booklet*. May be repeated with permission of department chairman.

184 • Modern European Literature (4) [D]

Such authors as Dostoyevsky, Tolstoy, Proust, Kafka, Mann and Sartre.

187 • Special Studies in Modern Literature (4) [D]

A special studies course in modern literature. Topics will vary from quarter to quarter. To see what is being taught any particular quarter, students should consult the department's *Course Outline Booklet*. May be repeated with permission of department chairman.

189 • Literature of the Sixties and Seventies (4) [D]

Study of English and contemporary drama, fiction, and poetry written since 1960.

190 • Ethnic Literature (4) [D]

Writings in English by natives of such countries as India and Ghana, and by American Negroes, Indians and Mexican-Americans.

191 • Readings in Afro-American Literature (4) [D]

Such major Afro-American writers as Chesnutt, Dunbar, Bontemps, Ellison, Baldwin and Wright, with emphasis on psychic and cultural contexts.

192 • Science Fiction (4) [D]

The course examines science fiction as a literary genre. Emphasis throughout is upon the nature and development of the genre in its historical and cultural context. Suitable for majors as well as nonmajors.

194 • Group Studies for Advanced Students (2-4)

Prerequisites: Upper Division standing, consent of the instructor and the department chairman.

Designed to meet special curricular problems. May be taken only once for elective credit in the major. Enrollment normally limited to 12 or fewer students.

196 • Honors English (4)

Prerequisite: Consent of department chairman.

An undergraduate seminar for Honor students. Topics carefully selected to present both breadth and depth.

197 • Senior Seminar (4)

Prerequisite: Senior standing

An undergraduate seminar limited to senior English majors or juniors with consent of the instructor. Content will vary with each instructor. One quarter is required; may be repeated once for additional credit.

***199 • Independent Studies in English (1-5)**

Reading and conference for students with upper division standing. 199 courses are limited to no more than five units in one quarter and no more than 12 units total.

Graduate Courses

200 • Methods of Literary Study (4)
(Formerly 208)**201 • Literary Criticism: Plato to Jonson (3)**
(Formerly 217)**202 • Literary Criticism: Dryden to the Present (3)**

201 is not prerequisite to 202.

203 • Creative Writing (4)

Prerequisite: Consent of instructor.

205A • Old English (4)

Introduction to the language and prose.

205B • Old English (4)

Shorter poems and introduction to *Beowulf*. 205A prerequisite to 205B.

205C • Old English (4)

Completion of *Beowulf*. 205A—B prerequisite to 205C.

206 • The History of the English Language (4)**207 • The Structure of the English Language (4)****208 • Applied Rhetoric, Poetics and Linguistics (4)**

Prerequisite: Consent of instructor.

The application of linguistic and rhetorical principles to the study of literature. Emphasis on practical criticism. Two quarters.

Contents of "Studies" courses and Seminars listed below will vary from quarter to quarter; therefore these may be repeated for credit with the consent of the chair of the Departmental Graduate Committee.

*See N-2 for 198/199 independent studies unit limitations.

220 • Theory of Composition (4)

An examination of current theories of composition and their intellectual background with a review of recent research in the composing process and in related fields. Includes experiments and exercises in composing and in analyzing compositions, using written work of class members.

230 • Studies in Medieval Literature (4)**231 • Studies in Renaissance Literature (4)****232 • Studies in Restoration and Eighteenth-Century Literature (4)****233 • Studies in Nineteenth-Century Literature (4)****234 • Studies in Twentieth-Century Literature (4)****235 • Studies in American Literature (4)****236 • Studies in Literary Criticism (4)****260 • Seminar in Medieval Literature (4)****261 • Seminar in Renaissance Literature (4)****262 • Seminar in Restoration and Eighteenth-Century Literature (4)****263 • Seminar in Nineteenth-Century Literature (4)****264 • Seminar in Twentieth-Century Literature (4)****265 • Seminar in American Literature (4)****270 • Seminar in Poetry (4)****271 • Seminar in Drama (4)****272 • Seminar in Fiction (4)****273 • Seminar in Literary Criticism (4)****297 • Graduate Studies (1-4)**

Graduate credit given for an Upper Division course with additional work at the graduate level.

596AA—596ZZ • Directed Reading and Research (1-4)

Individual tutorial. A written proposal for each tutorial must be approved by the department chairman and filed with the Graduate Division.

597 • Individual Study for Master's Comprehensive and Ph.D. Examinations (1-12)

Maximum of 12 units per quarter. Satisfactory/Unsatisfactory grade. Instructor should be the student's major professor or the chairman of his doctoral committee. No unit credit allowed toward advanced degree(s). Enrollment limited to 24 units per examination.

598 • Directed Teaching (4)

Supervision and instruction of Teaching Assistants. Continuing instruction in the teaching of the departmental course in "First Year Reading and Composition." Teaching Assistants must register for this course Satisfactory/Unsatisfactory grading

599AA—ZZ • Dissertation Research and**Preparation (1-6)**

Only for research underlying the dissertation; writing the dissertation.

Related courses in other departments

Education SE 390 • Curriculum and Instructional Procedures and Materials Used in Teaching English in the Secondary School (1)

Prerequisite: Admissions to Secondary Credential Program in English.

Seminar for student teachers in classroom application of educational theory to the teaching of English. Three quarters required.

Education SE 392 • Student Teaching: English (3-6)

Prerequisites: Education SE 390 and admission to student teaching.

Education SE 393 • Problems Seminar in Teaching of English (2)

Prerequisite: Education SE 390.

Education SE 394 • Current Trends in the Teaching of English (4)

Seminar, limited to experienced teachers of English, aiming to reassess the goals and methods for the teaching of English.

Linguistics 160 • The Structure of English (4)

Environmental Studies

Professors

*Daniel B. Botkin, Ph.D., *Rutgers University; biology; Chairperson of Environmental Studies Program.*

*Roderick W. Nash, Ph.D., *University of Wisconsin; history.*

Associate Professor

*Edward A. Keller, Ph.D., *Purdue University; geomorphology.*

Lecturers

Cynthia Sage, M.A., *UC Santa Barbara; geological sciences. Visiting Lecturer*

Arent H. Schuyler, Jr., M.A., *UC Santa Barbara; biological sciences, on leave 1980-81.*

Professor Emeritus

Garrett Hardin, Ph.D., *Stanford University; human ecology.*

Executive Committee (1980-81)

(See appropriate departmental entries for faculty information.)

Biliana Cicin-Sain, Ph.D., *Associate Professor of Political Science.*

Jeff Dozier, Ph.D., *Associate Professor of Geography.*

John Ernest, Ph.D., *Professor of Mathematics.*

Arthur Hubbard, Ph.D., *Professor of Chemistry.*

Michael Jochim, Ph.D., *Assistant Professor of Anthropology*

Jon Sonstelie, Ph.D., *Assistant Professor of Economics.*

Concerns of the department

Environmental Studies is a multi-disciplinary, problem-oriented major offering direction to students interested in the total environment and its management. The major is designed to give the student a knowledge of the characteristics of the environment and the working approaches to the solution of environmental problems.

Departmental advising and publications

Advising is available to students from the program chair and any available faculty member. The program also employs peer advisers who are ES majors and trained in the requirements of the major. An "Environmental Studies Handbook" listing possible course combinations is available in the departmental office for student use. A brochure describing the ES program is prepared annually.

*Member of Environmental Studies Executive Committee

Bachelor of Arts

Preparation for the major

Required: Environmental Studies 11, 12 and 13; Chemistry 25 or Chemistry 1; Economics 1; introductory statistics or a course in calculus or linear algebra; Physics 10 or Physics 6; Biology 20 or Biology 11.

Upper Division Major

Required: Environmental Studies 115, 164 and 197AB, and 24 additional units chosen from the following list, with no more than one course taken from each group below, *except* Environmental Studies. (Note that Anthro 124A & B, Biology 145A & AL, Botany 103A & B, Political Science 177A & B, Geography 101 and 101L, and Mechanical Engineering 157A & B are considered single courses for this purpose.)

Anthropology

- 104 • **Ethnology of the Common Good** *or*
- 110 • **Technology and Culture** *or*
- 124A • **Human Exploitation of Plants & Animals** *and*
- 124B • **Human Exploitation of Plants & Animals**
- 160 • **Cultural Ecology** *or*
- 178 • **Seminar on Utopian Societies**

Art History

- 165A • **Theories of Architecture** *or*
- 165C • **Architecture and Urban Design**

Biology

- 133 • **Principles of Human Genetics** *or*
- 145A • **Physics and Chemistry of Aquatic Environments** *with or without lab or*
- 145B • **Biological Processes in Aquatic Ecosystems** *with or without lab or*
- 145C • **Aquatic Communities** *or*
- 180 • **Ecological Theory**

Botany

- 103AB • **Vegetation and Flora of California** *or*
- 140 • **General Plant Ecology** *or*
- 141 • **Physiological Plant Ecology** *or*
- 142 • **Community and Ecosystem Ecology**

Chemistry

- 101 • **Problems in Environmental Chemistry**

Economics

- 110 • Contemporary Economic Problems *or*
 115 • Environmental Economics *or*
 120 • Urban and Regional Economics *or*
 122 • Natural Resource Economics

English

- 141 • American Literature and the American Environment

Environmental Studies

- 105 • Solar Energy
 109 • The Ocean Environment Part I: Physical Chemical Processes as They Relate to Oceanic Biology
 110 • The Ocean Environment Part II: The Ocean's Vertebrates
 111 • Environmental Ethics
 116 • The Urban Environment
 122 • World Population and Food Supply
 125 • Principles of Environmental Law
 126 • Environmental Law: Advanced Study and Practice
 130 ABC • Third World: Environment and Prospects
 133 • California Agriculture and Associated Environmental Effects
 134 • Coastal Environments of North America
 135 • Principles of Environmental Planning
 136 • Environmental Perception and Behavior
 165ABC • Environmental Impact Analysis
 170 • The Evolution of Ecological Ideas
 177 • Advanced Environmental Economics
 180AB • Studies of Regional Environmental Problems
 187 • Managing Future Environmental Problems
 192 • Internships in Environmental Studies (4 units only)
 194 • Group Study (4 units only)
 199 • Independent Investigation in Environmental Studies (4 units only)

Note: Any UD Env. Sts. course taken at UCSB will apply to the 24 unit requirement, subject to credit restrictions, if any, for such courses.

Ergonomics

- 142 • Leisure and Society

Geography

- 101 • Spatial Analysis *and*
 101L • Spatial Analysis Laboratory *or*
 106 • Urban Geography *or*
 111 • Climatology *or*
 112 • Hydrology *or*
 114 • Geography of Soils *or*
 162 • Environmental Pollution

Geology

- 106 • Geological Problems of the Human Environment

History

- 105 • The Atomic Age *or*
 173C • American Environmental History *or*
 173T • Wilderness and Man: History, Meaning, and Management *or*
 174A • The Machine in America *or*
 174B • The Machine in America *or*
 176A • The American West *or*
 176B • The American West *or*
 177 • History of California *or*
 178A • American Urban History *or*
 178B • American Urban History

Mechanical Engineering

- 110 • Engineering Systems and the Environment *or*
 157AB • Design of Optimal Systems

Nuclear Engineering

- 110 • Engineering, Energy, and the Environment

Political Science

- 154 • Public Opinion *or*
 175 • Politics of the Environment *or*
 177AB • Politics and Population *or*
 190C • Laboratory/Seminar in Environmental Policy Problems

Religious Studies

- 168 • Man in Nature: East Asian Views

Sociology

- 107 • Demographic Analysis *or*
 121 • Environment and Society *or*
 123 • Population *or*
 126 • Urban Society *or*
 127 • Sociology of Urban Planning and Design *or*
 132 • Public Opinion

Zoology

- 113A • Evolution and Behavioral Ecology of Terrestrial Vertebrates *or*
 113B • Evolution and Behavioral Ecology of Terrestrial Vertebrates *or*
 140 • Ecology

Note: Other courses may be approved as substitutes upon petition to the major committee.

Also required: 20 upper division units in a coherent field of emphasis, normally selected from a single depart-

ment outside of Environmental Studies, chosen in consultation with the faculty adviser. Early choice of concentration, in consultation with the appropriate departmental representative, is essential. If courses in the department of concentration are included in the 32 unit elective list above, they may be applied to both requirements simultaneously. A second major is considered complete fulfillment of the concentration requirement.

With the exception of ENV S 192 (which must be taken Passed/Not Passed), all courses taken for the ES major must be taken for a letter grade.

Career opportunities

Environmental Studies prepares students for careers ranging from teaching and government to law and business. The program is also preparation for work in the expanding fields of urban and regional planning, environmental impact analysis, natural resource management, conservation administration and energy policy. Normally a major in Environmental Studies is not alone sufficient for admission to

graduate programs in the sciences. Students with plans for graduate study in science should consider the possibility of a double major in Environmental Studies and the appropriate science.

Teaching credentials

Students who complete the major in Environmental Studies may be eligible to pursue a California teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180 Phelps Hall.

Correspondence information

Environmental Studies Program, Phelps Hall, Rm. 3206, University of California, Santa Barbara, California 93106 Phone: (805) 961-2968.

Environmental Studies

Lower Division courses

11 • The Social Environment (5) Nash [E2]

Lecture, four hours, discussion, one hour.

Introduction to basic concepts in anthropology, history, ethics, religion and political science that aid in understanding human attitudes and action toward the environment. Several case studies illustrate the way ideas and politics interact to determine environmental policy. (F)

12 • The Physical Environment (5) Keller and Manalis [B2]

Recommended: Chem 25 or 1, Physics 10 or 6. Lecture, four hours, discussion, one hour

An introductory examination of land, water, and air problems resulting from human occupancy of the Earth's surface. Emphasis is on urbanization and associated environmental problems. Topics include: nature and sources of air and water pollution, urban climate, control and cost of air and water pollution, hydrological cycle in the urban environment, methods of flood forecasting, and influence of soils and urban functions. (W)

13 • The Biological Environment (5) Botkin [B2]

Recommended: Chem. 25 or 1, Physics 10 or 6, Biology 20 or 11. Lecture, four hours, laboratory, three hours.

A study of general principles of ecology and their implications for analyzing environmental problems. Topics include ecosystem structure and function, population dynamics control. Case histories will be discussed that demonstrate the application of these concepts to the management of renewable natural resources. (S)

25FS • Freshman Seminar in Environmental Studies (3) Staff

Interdisciplinary investigation of an environmental problem and approaches to its solution. Open only to freshmen. (F)

Upper Division courses

105 • Solar Energy and the Environment (4) Manalis [B2]

Prerequisite: Must have completed at least one course from the B-1 series of general education requirements.

Each major solar energy field is investigated in detail. Topics include heating and cooling, photovoltaics, chemical and bioconversion, and mechanical extraction. Effects of solar energy applications on the physical, social and economic environments are studied. Some guest lecturers, demonstrations and field trips are planned. (S)

109 • The Ocean Environment Part I: Physical Chemical Processes as They Relate to Oceanic Biology (4) Woodhouse [B2]

Prerequisite: Background in biology and/or environmental science. Lecture, three hours, Laboratory, three hours.

This is the first of a two-part oceanographic course. Material will draw on features found in marine habitats of the Santa Barbara Channel and adjacent waters. Basic principles will be used to develop a logical interpretation of this marine system. The course will include the many ways major groups of organisms have become adapted to survive in particular habitats (F)

110 • The Ocean Environment Part II: The Ocean's Vertebrates (4) Woodhouse [B2]

Prerequisite: ENV S 109 and/or background in marine biology. Lecture, three hours.

Drawing on principles developed in ENV S 109, this course will cover the biology and ecology of marine vertebrates with emphasis on marine mammals, will explore mammalian adaptation to aquatic existence, introduce the systematics and general biology of marine mammals, discuss the role of marine mammals in major marine ecosystems, and consider historic and contemporary problems of fisheries involving marine mammals. (S)

111 • Environmental Ethics (4) Staff [E2]

Lecture, three hours

The bearing of the themes, concepts, problems and methods of moral philosophy upon cur-

rent environmental issues. Value implications of ecological principles and concepts. Six approaches to Environmental Ethics (i.e., perspectives on man's relationship and responsibility to nature)—viz., Anthropocentrism, Biohumanism, Naturo-Aestheticism, Holism, Contextualism, Mysticism. Coordination and synthesis of these approaches. (F,S)

115 • Energy and the Environment (4) Schuyler [B2]

Prerequisite: Economics 1 and Physics 10.

Lecture, four hours, discussion, 1 hour.

A survey of man's present and future use of energy. The technical problems, the environmental effects and the economic costs of each energy source are considered. Elementary thermodynamics, radiation, nuclear reactions, electricity and risk analysis are studied. (W) (Not offered 1980-81.)

116 • The Urban Environment (4) Staff [E-2]

Lecture, three hours.

Comparison of theories of urban development (cities as a unique array of social, political and economic conditions vs. effects of capitalist production and social organization). Examination of the interpenetration of capitalist system of organizing production, the city as built environment and larger issues of resource scarcity and quality of life.

122 • World Population and Food Supply (4) Murdoch [E2]

Prerequisite: ENV S 11, 12, 13 (or equivalents), Environmental Economics course or other economics course. A course in statistics (can be taken concurrently). Lecture, three hours.

The main purpose of this course is to analyze the underlying causes of the world food/population problem. Such topics as high birth rates in underdeveloped nations, and environmental implications of different agricultural and population strategies will be considered (F)

125 • Principles of Environmental Law (4) McGinnes [E2]

Lecture, three hours.

An introduction to the history and methodology of law as it relates to man's use of the environment. (F)

126 • Environmental Law: Advanced Study and Practice (4) McGinnes [E2]

Prerequisite: ENV S 125 or consent of instructor. Seminar, three hours.

A detailed analysis and practical experience in selected areas of environmental law. The importance of the environmental scientist, as fact-finder and expert witness, is to be stressed and illustrated. Local specialists, attorneys and public officials will be invited to participate in discussions of specific environmental law issues, and the students will have the opportunity to work in teams, under expert supervision on current cases. (W)

130A—B—C • Third World: Environment and Prospects (4-4-4) Riley [E2]

Lecture, three hours.

A three quarter sequence. The first part emphasizes the rural areas, the second the urban and industrialized sectors. In the third, seminar papers presenting in-depth analyses relevant to Third World/LDC environmental issues and problems will be required. A case study approach is used throughout the sequence.

133 • California Agriculture and Associated Environmental Effects (4) Sage [E2]

Lecture, three hours.

Survey of the evolution of California agriculture from Spanish times to the present including history, land-use trends, farming practices, economics, urban pressures, and the associated environmental effects involved with agriculture land utilization. (W)

134 • Coastal Environments of North America (4) Keller [E2]

Prerequisite: ENV S 12 or Geology 2 or 101 or 3 or consent of instructor. Lecture, three hours; field trips.

A survey of coastal processes and environments of North America with emphasis on the West Coast. The course will include a discussion of the effects of human activity on the coastal environments and possible alternatives to minimize environmental degradation. (F)

135 • Principles of Environmental Planning (4) Wack [E2]

Lecture, three hours.

An introduction to the history and theory of urban, regional, national, and international planning for responsible use of the environment. Field trips to local urban areas. (W)

136 • Environmental Perception and Behavior (4) Staff [E2]

Lecture, three hours.

An examination of how physical environments are perceived and evaluated. Topics include human responses to natural hazards, the nature of cognitive maps and images, the effects of crowding and density on behavior, and personal space and territoriality. (W)

164 • Introduction to Environmental Analysis (4) Staff [E2]

Lecture, four hours.

A discussion of the major issues surrounding the effects of modern civilization and technology on the environment. Included in this discussion will be current methods for assessing these ef-

fects. This course serves as an introduction to ENV S 165. (F)

165A—B—C • Environmental Impact Analysis (4-4-4) Sage [E2]

Prerequisite: Senior Standing only. Background in physical and biological sciences, planning, resource management and economics. Admission by permission of instructor only. Enrollment application available through ES office during Spring quarter. ENV S 165A, lecture one hour, field four hours, mandatory three-day field trip; ENV S 165B, lecture, three hours; ENV S 165C, seminar, three hours.

ENV S 165ABC is a 3-quarter sequence beginning each Fall quarter. Students must enroll in the whole sequence. ENV S 165A provides a field methods approach to environmental assessment preparation with an emphasis on understanding data and terminology collected by technical experts that must in turn be synthesized into a final environmental impact report. ENV S 165B analyzes the theoretical approaches and history to environmental impact assessment with review of selected environmental impact reports. ENV S 165C focuses on the actual preparation of an environmental impact report for a hypothetical local project. (F,W,S)

170 • The Evolution of Ecological Ideas (4) Botkin [E2]

Prerequisite: ENV S 11-13 and consent of instructor. Lecture, three hours.

A comparison of twentieth century scientific concepts in ecology and their historical counterparts. The scientific foundations and the role of the ecological concepts in Western civilization are discussed. (W)

177 • Advanced Environmental Economics (4) Staff [E2]

Lecture, three hours.

A study of economic principles as applied to a broad part of the subject of externalities or pollution.

180A—B • Studies of Regional Environmental Problems (4-4) Staff

Prerequisite: Junior or Senior standing. Admission by permission of instructor only. Seminar, three hours, field trip.

Detailed study of the environmental characteristics and problems of a particular area such as Yosemite, Point Reyes, Mojave Desert, Grand Canyon, and the Los Angeles Basin. An intensive week-long field trip will follow the course. Depending on the topic, may be offered as one or two-quarter sequence.

187 • Managing Future Environmental Problems (4) Staff [E2]

Lecture, three hours.

Classification of environmental and social problems, problems of drift, secondary effects of choice, complex management, social traps and non-zero-sum games of multiple decision makers; monitoring, early-warning, and simulation methods; hierarchical restructuring to new superordinate authority.

192 • Internship in Environmental Studies (1-12) Staff

Prerequisite: Upper Division status, 3.00 overall GPA. Environmental Studies majors only, approval by department.

Opportunities to learn about practical approaches to environmental problem-solving by

working under faculty direction as interns with local, state, and federal agencies concerned with the environment or with private research and business organizations. Periodic and final reports will be part of the internship. Only four units may count toward the major. Offered P/NP only. (F,W,S,SS)

194 • Group Study (1-5) Staff

Prerequisite: Upper Division status or consent of instructor.

Directed group reading and study on specific subjects for Environmental Studies majors. Admission by special arrangement with the Environmental Studies Committee chairman. No more than four units may be counted toward the major. (F,W,S)

197A—B • Senior Thesis (2-4) Wack

Prerequisite: All of the lower division requirements should be met before starting the Senior Thesis or the instructor's consent must be obtained.

The purpose of ENV S 197 is preparation of an extensive paper integrating knowledge acquired in the major. Required of all Environmental Studies majors, taken in the last two or three quarters of the senior year. (F,W,S)

***199 • Independent Investigation in Environmental Studies** (1-5) Staff

Directed research in the characteristics and problems of the environment. Open only to students majoring in Environmental Studies who are approved by the Committee chairmen. Courses are limited to no more than five units in one quarter and twelve units total. Students must have completed 125 units. No more than four units may be counted toward the major. (F,W,S)

Related courses supported by Environmental Studies

Chemistry 101 • Problems in Environmental Chemistry (3) Staff [B1]

Prerequisite: ENV S 12 and 115 or one of the following: Chemistry 1B, Chemistry 25, or Natural Science 1B. Lecture, three hours.

The chemistry of air, water, and soil pollution; sources and methods of control; chemical dynamics in the environment; chemical and instrumental methods of analytical pollution monitoring; chemical quality standards and their maintenance. Open to Chemistry majors for credit but cannot be used to satisfy required Chemistry electives.

Geology 106 • Geological Problems of the Human Environment (4) Keller [B1]

Prerequisite: Geology 2 or 101 or the equivalent or the consent of the instructor. Lecture, three hours; discussion, one hour.

Problems concerning earthquakes, mineral and energy resources, construction projects (dams, highways, tunnels, etc.), floods, beach erosion, etc. Principles of sound planning for the human use of the solid earth. (S)

*See N2 for 198/199 independent studies unit limitations.

History 173T • Wilderness and Man: History, Meaning and Management (4) Nash [E1]

The significance of wilderness in world history with an emphasis on man's relation to it both aesthetically and economically. The perspective will be international, although the American experience is the central concern. Special attention to the problems of preserving wilderness in modern civilization and to the future of wild country. Case studies and audio-visual techniques will be an important part of the course as will a wilderness field trip. (W)

Physics 13 • Environmental Physics (3) Manalis [B1]

Lecture, three hours.

The course uses analysis of environmental problems to illustrate principles of physics. Interest in physical principles as well as in environmental concerns is necessary. Physical problems will be treated quantitatively with elementary algebra, geometry and trigonometry.

Political Science 190C • Laboratory Seminar in Environmental Policy Problems (3) Noel, POLIS Staff [E1]

An examination, through computer-based gaming and simulation of selected problems in envi-

ronmental policy and politics. Offerings of 190C will alternate between an urban airpollution focus (the "METRO-APEX" simulation) and a waterpollution focus (the "River Basin Model"). Accordingly, 190C may be repeated for credit. (190C may be taken independently of other 190 labs.)

Sociology 121 • Environment and Society (4) Staff [E1]

Lecture, three hours.

Impact of social institutions on human-environment relations. Cultural conceptions of human-environment links. The present crisis and possible future.



Ergonomics and Physical Education

Professors

Rowand R. J. Chaffee, Ph.D., *Harvard University; environmental physiology - metabolic control mechanisms.*

Steven M. Horvath, Ph.D., *Harvard University; biomedical engineering - cardiovascular physiology. (Chairperson)*

Evelyn M. Jones, Ph.D., *University of Wisconsin; nutrition and biochemistry.*

Ernest D. Michael, Ph.D., *University of Illinois; exercise physiology.*

Rene H. Rochelle, Ph.D., *University of Illinois; work physiology - circulatory studies.*

Professors Emeriti

Marian H. Anderson, M.S., *University of Southern California.*

M. Marilyn Flint, Ph.D., *Iowa State University.*

Theodore Harder, Ed.D., *University of Oregon.*

Jean Hodgkins, Ed.D., *Columbia University.*

Joseph E. Lantagne, Ed.D., *Stanford University.*

Elvera Skubic, Ph.D., *University of Southern California.*

Gladys R. Van Fossen, M.A., *University of Southern California.*

The Physical Education major will be phased out at this campus effective Spring 1984, according to the following schedule:

Fall 1980—Latest date for the admission of freshmen.

Fall 1981—Latest date for the admission of sophomores.

Fall 1982—Latest date for the admission of juniors.

Fall 1983—Latest date for the admission of seniors.

Students currently pursuing the P.E. major and those admitted to it as noted above will be expected to complete their major requirements by Spring 1984, and they are urged to consult their major adviser for assistance with program planning so as to meet this deadline.

Concerns of the department

Ergonomics is the study of human performance and adaptability. The primary educational goal of the Department is concerned with that part of applied human physiology relating to human movement.

Department advising and publications

Interested individuals may obtain the following publications from the Department Office:

1. Leaflets of Major Requirements: Physical Education, Physical Education for Teaching Credential, Physical Education for Preparatory Clinical Physical Therapy.

2. Leaflet of annual course offering by quarters

These may be obtained in Phelps 1315 or by writing to the Department of Ergonomics and Physical Education. Students are encouraged to consult this catalog, the UCSB

Schedule of Classes and the departmental publication for information about majors, requirements and course offerings.

The Department Chairperson has special sessions each quarter with new, re-entering, and transfer students.

Students may obtain information from the Ergonomics office (Phelps 1315) and consult with professors during their office hours or by appointment.

Bachelor of Arts—Physical Education

The curriculum in Physical Education provides the fundamental body of knowledge of the science of human movement encompassing that area of applied physiology dealing with work, exercise, and environmental adaptation. This academic major serves as an appropriate discipline underlying work toward graduate studies, clinical training in physical therapy, and teaching credentials.

Preparation for the major

Required: Chemistry 1A—1AL; Physics 6A—6AL or 10; Zoology 25, 40 (with labs); Psychology 1 or 101; Sociology 1 or 101; ERG 20, and 30; six units of physical activity courses to include the following: aquatics, gymnastics, tumbling, track and field, basketball, dance, weight training, exercise and figure control, volleyball and tennis.

Upper Division major

Required: ERG 101, 105, 109, 110, 111, 118, 130. *Electives:* 12 units in upper division courses in ERG with no more than six units in the 190 series.

Master of Arts—Ergonomics

Admission requirements and prerequisites

In addition to fulfilling the general requirements for admission to graduate status (see I), the department requires an undergraduate major in an ergonomic field or its equivalent in related sciences.

Requirements for the M.A.

I: Thesis Plan—A minimum of 30 quarter units and a thesis are required. The units may be taken in graduate or upper division courses, and at least 16 must be in the 200 series in the major subject. Courses outside the major may be taken upon approval by the student's advisory committee. No more than 12 units may be taken in the 500 series. No unit credit is allowed for the thesis.

II: Comprehensive Examination Plan—A minimum of 36 units of upper division and graduate courses is required, of which at least 20 units will normally be in the 200 series in the major subject. Courses outside the major may be substituted upon approval by the student's advisory com-

mittee. Satisfactory performance in a comprehensive examination and four units of 596 course work are required.

Career opportunities

Career information can be obtained from the department.

Teaching credential

Students who complete a major in Physical Education may be eligible to pursue a California teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180, Phelps Hall.

Certain majors may require students contemplating a teaching career to complete specified courses within the major. These courses include ERG 103, 109, PA 163A—B, and one course from the PA 170 series.

These requirements should be satisfied within the bachelor's degree program and must be completed prior to formal admission to the credential program. Consult with designated counselors in the Department of Ergonomics

and Physical Education to become informed about these special requirements in the area of Physical Education.

Preparation for physical therapy

Students who complete a major in physical education may be eligible for admission into an accredited physical therapy training program if they select the following courses in addition to the major:

Chemistry 1B—BL; 1C—CL

Physics 6A—AL; 6B—BL

Psychology 103

Several of the programs require additional courses in biology, psychology, mathematics, chemistry, and the social sciences. Students should review admission information of clinical programs they wish to consider before planning their course work. Students should consult with the pre-health adviser in the Office of the College of Letters and Science.

Correspondence information

Department of Ergonomics and Physical Education, Phelps Hall 1315, University of California, Santa Barbara, California 93106. Phone: (805) 961-2777.

Ergonomics

Lower Division courses

10 • Science of Nutrition (4) Jones [B2]

Lecture, four hours.

Science of human nutrition with emphasis on food supplies and food selection.

20 • Concepts of Physical Education (3) Staff

An interpretation of the field designed to give the prospective major student an understanding of its scope.

30 • Basic Statistics (4) Staff

Lecture, three hours; laboratory, three hours.

Measures of central tendency, dispersion, and correlation. Inferential statistics, hypotheses testing, the significance of differences. Introduction to nonparametrics. Interpretation of statistical methods in the physiological and psychological areas of performance.

Upper Division courses

Enrollment in upper division courses is normally limited to students in upper division or graduate status who have successfully completed the appropriate prerequisite courses. Lower division students may enroll in these courses only with prior consent of the instructor.

101 • Analysis of Movement (4) Staff

Prerequisites: Zoology 25 and Physics 6A or 10. Lecture, three hours; laboratory, three hours.

Basic concepts of human movement, physical and biological principles involved, and their application to fundamental movement patterns and athletic skills.

102 • Advanced Analysis of Movement (4) Staff

Prerequisite: ERG 101. Lecture, three hours; laboratory, three hours.

Analysis and evaluation of contemporary research in biomechanics, skill performance and related topics.

103 • Kinesiotherapy (4) Staff

Prerequisite: ERG 101. Lecture, three hours; laboratory, three hours.

Pathology of handicapping conditions, variations of human structure and the role of exercise in the development and improvement of movement for the physically handicapped. Principles required for posture control and basic movement patterns. An evaluation of selected exercises

104 • Advanced Kinesiotherapy (4) Staff

Prerequisites: ERG 101 and ERG 103. Lecture, three hours; laboratory, three hours.

Therapeutic exercise, rehabilitative techniques and developmental activities for the physically limited person. A thorough investigation of certain debilitating conditions including case histories. Visits to specialized clinics and rehabilitation centers.

105 • Physiology of Exercise (4) Michael [B2]

Prerequisite: Zoology 40. Lecture, three hours; laboratory, three hours.

Response of organs and systems to exercise; the response of ventilation, heart rate, and peripheral blood flow to exercise, metabolism and exercise, oxygen uptake and oxygen debt parameters.

106 • Advanced Physiology of Exercise (4) Michael [B2]

Prerequisite: ERG 105 or consent of instructor. Lecture, three hours; laboratory, three hours

Sources of energy for exercise; diet and body composition; energy balance; respiratory and metabolic changes with exercise.

107 • Community Health Agencies (4) Jones

Lecture, four hours.

An analysis of community agencies supported by public and private funds which are concerned with the health and welfare of the population of the United States.

109 • Health 20th Century (4) Staff

Lecture, four hours.

An in-depth study of communicable diseases and epidemiology, cardio-respiratory diseases, aging, the health and development of the adolescent, the pharmacology and toxicology of selected drugs, (including alcohol, tobacco, narcotics and other drugs) as well as health care and consumer protection. Includes the nature and scope of health education as provided in the *Health Instruction Framework*.

110 • Neuromuscular Physiology (4) Chaffee [B2]

Prerequisites: Chemistry 1A; and Zoology 40. Lecture, four hours.

Biochemical and cellular-physiological aspects of muscle and nerve cell function, and the function of the central and autonomic nervous system and other selected organ systems associated with motor performance.

111 • Growth and Motor Development (4) Rochelle

Lecture, four hours.

Motor development from infancy to maturity, age changes, sex, and individual differences, maturation and motor learning in childhood and adolescence, relation of motor performance to other aspects of behavior.

112 • Public Safety and Accident Prevention (4) Staff [E2]

Lecture, four hours.

An analysis of causes of types of accidents and research supporting their prevention. Emphasis to be placed on the interaction among

physiological, psychological, and sociological factors relating to accidents.

118 • Perceptual Motor Learning (4) Staff [E2]

Prerequisite: Psychology 1 or 101. Lecture, three hours; laboratory, three hours.

Sensory, cognitive and motor processes involved in motor learning; perceptual motor dysfunction; environmental and instructional factors influencing the learning situation.

130 • The Cultural Bases of Physical Education (4) Staff

Prerequisite: ERG 20. Lecture, four hours.

The philosophical and sociological foundations of Physical Education. An examination of principles of natural and behavioral science as determinants of current beliefs and practices. Social variables which affect and are affected by individuals and groups as they engage in movement.

142 • Leisure and Society (4) Staff

Prerequisite: Sociology 1 or 101. Lecture, three hours; discussion, one hour.

A study of the role of leisure in society. Causal factors of the increase in leisure in the United States; implications of automation. Urgency of the need for widespread recognition of the potential problems involved.

156 • Cardiorespiratory Physiology of Performance (4) Rochelle [B2]

Prerequisite: ERG 105. Lecture, three hours; laboratory, three hours.

Function and regulation of the circulation, heart, vascular bed, dynamics of the circulation, reflexes, and blood as a tissue.

158 • Physiological Adjustment to Work and Environmental Stress (4) Chaffee

Prerequisite: Consent of instructor. Lecture, four hours.

Interrelations of the reactions and adjustments made by the working man to the usual stressful states to include temperature and humidity alterations, altitude and underwater living and also to the newer environmental stressors, such as air pollution, and urban living.

165 • Perceptual Motor Re-education (4) Staff

Prerequisite: ERG 118 or consent of instructor. Lecture, three hours; laboratory, three hours.

A study of prominent theories underlying perceptual-motor types of dysfunctions. An analysis of problems and their remediation through motor activity. Laboratory: Work with elementary school children involving administration of tests, diagnosis of problems and the implementation of a perceptual-motor program.

180 • Seminar: Leisure and the Child (3) Staff

Prerequisite: Consent of instructor. Lecture, two hours; laboratory, four hours.

Theories of play, motivation and creativity. Application of principles of human movement. Laboratory experience in the elementary schools.

182 • Nutrition and Biologic Processes (4) Jones [B2]

Prerequisites: Chemistry 1A—B—C, Biology 11A, ERG 10 and Zoology 40. Lecture, four hours.

The biological role of carbohydrates, fats, proteins, vitamins, minerals and water in relation to human nutrition.

194 • Individual and Group Studies (1-4) Staff

Prerequisite: Consent of instructor.

A critical review of research in selected areas. Enrollment normally limited to 12 or fewer students.

195A—B—C • Field Experiences in Ergonomics Settings (4-4-4) Staff

Prerequisites: Consent of instructor and senior standing. 3.0 GPA and 20 units completed in the upper-division major. Lecture, three hours; field experience, five hours. A—Physical Education. B—Health Studies C—Human Factors.

Supervised field experience in settings providing physical education, health and human factors services with opportunities for observation and participation. Students will spend approximately five (5) hours weekly in ergonomic settings, attend weekly class meetings, read related material, prepare written reports.

197A • Senior Seminar (3) Staff

Prerequisites: Qualified senior students and consent of instructor.

Seminar, three hours.

A study of the current literature of the field.

197B • Senior Seminar—Prephysical Therapy (3) Staff

Prerequisites: ERG 103 and 104 (or concurrently).

Seminar, three hours.

Advanced readings and discussion dealing with various problems related to physical medicine, rehabilitation or corrective physical education.

198 • Readings in Ergonomics (2-4) Staff

Prerequisites: Senior standing; consent of instructor and department chairman; minimum G.P.A. is 3.0 for the preceding 3 quarters.

Special readings designed to broaden the student's perspective in a selected area of ergonomics. The student's efforts should result in a paper or an annotated bibliography. Normally requires individual weekly meetings with the instructor. May be taken a maximum of three times

199 • Independent Studies in Ergonomics (1-5) Staff

Prerequisites: Only students in senior standing; consent of instructor and department chairman; minimum G.P.A. is 3.0 for the preceding 3 quarters.

Study of special problems in an ergonomic field. 199 courses are limited to no more than five units in one quarter and no more than 12 units total. Normally requires individual weekly meetings with the instructor. The independent study should generate a paper.

Graduate courses

206 • Seminar in Work Physiology (4) Michael

Prerequisite: ERG 105.

Physical growth and development of skeletal and muscular systems. Effects of exercise on adaptation to stress. Metabolic costs of work and energy balance. Training and fatigue, evaluation of work capacity.

207 • Environmental Physiology (4) Horvath
Prerequisite: Consent of instructor.

The physical, chemical, and biotic influences of the environment on man, and the adaptive changes in response to environment.

218 • Physiology of Aging (4) Horvath

Prerequisite: Consent of instructor.

Physiological alterations occurring consequent to the aging processes. A study of the changes which occur in the human organism from the moment of birth, through the developmental years to maturity and to biological senescence, with sociological and psychological correlates.

235 • Design and Statistical Analysis (4) Staff

Prerequisite: ERG 30 or consent of instructor. Lecture, three hours; laboratory, three hours.

Application of statistical methods to research in the physiology and psychology of human performance. Includes analysis of variance, latin square design, regression and distribution free statistics.

280 • Motor Learning and Performance (4) Staff

Prerequisite: ERG 118, or consent of instructor.

A critical examination of research in the area of motor learning. Environmental, physiological and psychological factors influencing the learning and performance of motor skills; perceptual-motor dysfunction.

594A—B—C—D • Special Topics (1-4) Staff

596A—B—C—D • Directed Reading and Research (1-6) Staff

598 • Master's Thesis Research and Preparation (1-6) Staff

Prerequisites: M.A. (Thesis) candidate and consent of committee chairman.

For research underlying the thesis and writing of the thesis. Maximum of 12 units total. No unit credit allowed toward degree.

Related courses in Education

Education P 390 • Curriculum and Instructional Procedures and Materials Used in the Teaching of Physical Education (3) Staff

Prerequisite: Major or an approved program in physical education.

Procedures, materials, methods and techniques of teaching physical education. Program planning and organization of physical education and athletic programs at the secondary level with observation in the elementary and secondary schools.

Education P 392 • Student Teaching: Physical Education (1-6) Staff

Prerequisite: Major or an approved program in physical education: Education P 390.

Teaching practice and class management under the supervision of master teachers and University supervisors.

Education P 393A—B • Seminar in Student Teaching: Physical Education (1-1) Staff

To be taken concurrently with Education P 392.

Film Studies

Advisory Committee (1980-81)

(See appropriate departmental entry for faculty information.)

Carlos Barron, Ph.D., *Professor of Spanish*.

², ³Alexander Sesonske, Ph.D., *Professor of Philosophy*.

Victor Fuentes, Ph.D., *Associate Professor of Spanish*.

Naomi Greene, Ph.D., *Associate Professor of French*.

Torborg Lundell, Ph.D., *Associate Professor of Swedish*.

Patrizio Rossi, Ph.D., *Associate Professor of Italian (Chairperson)*.

Garrett Stewart, Ph.D., *Professor of English*.

Harry Lawton, M.A., B. Litt., *Lecturer in Italian*.

², ³Absent on leave, Winter & Spring 1981

Concerns of the major

The Film Studies major is an interdisciplinary major dedicated to the study of film as a humanistic discipline. Through courses in various fields of study, the Film Studies major aims at providing a solid basis for critical evaluation of this medium and of the relationships between film and social conditions, and between film and the more traditional academic disciplines. Thus, the emphasis of Film Studies at UCSB is *critical* rather than *technical*. The purpose of the Film Studies Program is to unite the various courses in film given at intervals in various departments and to permit the organization of the study of film on a central but flexible basis.

Departmental Advising and Publications

Students wanting to know more about the Film Studies major or opportunities in the major should make an appointment in the Film Studies office to talk with an adviser.

Departmental publications are: *All About Film Studies* and a schedule of film showings printed every quarter.

Bachelor of Arts

Requirements for the Film Studies major are flexible and can be structured to meet the student's interests. In consultation with a faculty adviser, the student may work out an individual program centered around special interests and goals. Students are advised to call on the Chairperson or members of the Advisory Committee to discuss the program or courses.

Preparation for the major

Required:

Film Studies 46 • Introduction to Motion Pictures

Dramatic Art 60 • Understanding of Drama or 163 • World Drama and Theatre

History 4ABC • Western Civilization

Music 15 • Music History and Appreciation

Art History 6C • Art Survey III Renaissance-Modern Art

Strongly recommended: Art 160BC (Art in 20th Century Culture, I and II), Dramatic Art 160F (Development of Dramatic Art), English 120 (Modern Drama), History 72 (The Modern American Mind), History 173S (American Popular Cultural History), Philosophy 1 (Short Introduction to Philosophy), Sociology 134 (Social Movements), one year of relevant language and courses leading to reading knowledge of that language.

Upper Division major

Required: 44 upper division units including:

Film Studies 101ABC

Film Studies 105

Film Studies 146

Film Studies 192A

4 upper division units of contemporary literature or survey of literature chosen in consultation with the Film Studies adviser.

16 additional upper division units chosen from the following, with at least one course selected from a, d, e, or f:

a. Directors: Film Studies 155A—Q, 156, 186; French 184Y (French Film Directors); Scandinavian 145 (Bergman).

b. Film and Other Arts: Film Studies 158; French 184X (French Novel Into Film), 186X (Beckett and Godard: The Difficulties of Creation), 188X (Contemporary French Drama and Film in Translation); Italian 150X (Italian Novel Into Film); Art/German 160D (Expressionism in the Film, in Art and the Theater).

c. Film and Society: Film Studies 110, 152, 159, 165; Italian 180XYZ (World Cinema).

d. Genre: Film Studies 125AB, 128, 130, 140, 143, 170, 180; French 187 (Surrealist Film), 189YZ (Personal Documentary: From Vertov to Cinema Verite).

e. National Cinemas: Film Studies 120, 133, 135, 151AB; French 178XY (French Film: Theory and Practice), 184Z (Key Works of the French Cinema), 187X (French Cinema of the 1930's), 187Y (French Cinema since World War II); Italian 188XY (Introduction to Italian Cinema); Portuguese 128 (Luso-Brazilian Cinema); Scandinavian 140 (Swedish Film); Spanish 126 (Spanish Cinema), 127 (Latin American Cinema).

f. Theory, Criticism and Style: Film Studies 115, 188, 190, 191, 192B, 193.

Career opportunities

The Film Studies major is designed to provide undergraduate preparation for graduate studies in film or related fields and would also serve as preparation for careers in teaching, Library Science, and certain government positions, as well as job opportunities in such related businesses as publishing, film, and television.

Correspondence information

Film Studies Program, Ellison Hall, Rm. 1710,
University of California, Santa Barbara, California
93106. Phone: (805) 961-2347.

Film Studies

Upper Division courses

The Film Studies Program does not offer a fixed curriculum. Courses in film are offered at the discretion of the various departments and, because of the new and experimental nature of the field, are often subject to change and innovation; the curriculum is often supplemented by the addition of new courses. For this reason, a list of film courses with descriptions of the classes will be posted outside the Film Studies office before the beginning of each new quarter, as close to the opening of pre-enrollment as possible. Students are urged to consult this list before pre-enrolling.

46 • Introduction to Motion Pictures (4) Staff [C]
Introduction to the study of film; analysis of motion picture types and styles; film imagery and syntax; study and discussion of important filmic works.

101A • History of Cinema: The Silent Film (4) Wolfe [C]
The silent film from the camera obscura to *The Passion of Joan of Arc* via Chaplin, Keaton, Lang, Murnau, Eisenstein, Griffith, and Lotte Reiniger, etc. (F)

101B • History of Cinema: The Advent of Sound Film (4) Wolfe [C]
The advent of sound films: from *The Jazz Singer* to World War II. Lubitsch, Ford, Clair, Renoir, Ozu, Carne, Donskoi, Welles, Bunuel and others. (W)

101C • History of Cinema: Neo-Realism and After (4) Wolfe [C]
Rossellini, De Sica, Fellini, Ray, Kurosawa, Tati, Truffaut, Jancso, Wajda, Forman, etc. (S)

105 • Film Production (4) Staff
Prerequisite: Film Studies major or permission of instructor.
Instruction in techniques of filmmaking (super-8 or regular-8 format), along with sound production and synchronization. Students will make short films to be viewed by the class. (Repeatable for credit up to 12 units). (F,W,S)

110 • The Social and Artistic Importance of the Hollywood Studio (4) Lazarus
The effects of studio domination on American cinema and the ethos of the nation from the Thirties to the Sixties. Developing trends in film content, star values, and censorship surveyed with

particular attention to the massive influence of studio heads.

115 • Background to Contemporary Film Theory and Style (4) Staff [C]
Will explore the shaping of new film styles during the 1950's and concurrently the shaping of new critical approaches to film.

120 • Styles of Japanese Cinema (4) Staff [C]
An introductory scrutiny of three major Japanese directors: Mizoguchi, Ozu, and Kurosawa, and their individual film artistry. Close attention will be given to style, construction, how they compose their films, choices of subject and character, and their ideas of the cinematic.

125A—B • Documentary Film (4-4) Staff [C]
A: History of documentary film through Spanish Civil War.
B: History of documentary film from the end of the Spanish Civil War to the present.

128 • Charlie Chaplin, Buster Keaton, and the Silent Comedy Tradition (4) Staff [C]
A comparison of the art of the two great comedians and film directors through an examination of some of their best films. The tradition of silent film comedy and the work of some of their contemporaries will also be discussed.

130 • The Comedy Tradition (4) Staff [C]
An analysis of the comic tradition in American cinema using structural and historical approaches. Basic comic-dramatic patterns, theatrical sources, historical/social contexts. Some directors to be covered are: Lubitsch, Hawks, Capra, and Cukor.

135 • British Cinema (4) Staff [C]
Course will consider a selection of films representing the evolution of British cinema and its revelations of British life during the past half century. The work of Hitchcock, Grierson, Olivier, Carol Reed, and Tony Richardson will receive special attention.

140 • The Western Since 1950 (4) Staff [C]
Establishes the forms and rituals of the Western genre, and will reflect on what changes they have undergone. Attention will also be given to the trend towards realism, and the new moral and political revisions of the Western's view of society.

143 • Science Fiction, Science Fantasy (4) Staff [C]
Study of the techniques, psychology, and metaphysics of science fiction film from the turn of the century through important experiments in the Twenties and Thirties to its paranoid heyday in the Fifties and its current major renaissance in the Seventies.

146 • Aesthetics of Film (4) Sesonske [C]
A study of the basic formal dimensions of cinema: space, time, motion, sound.

151A • American Film: The 1930's (4) Wolfe [C]
A survey of American film in the 1930's with stress on major directors and genres.

151B • American Film: The 1940's (4) Wolfe [C]
A survey of American film in the 1940's with stress on major directors and genres.

152 • The American Left in Hollywood (4) Staff [C]
Exploration of the American left and its role in filmmaking from the 1930's through the early 1950's.

155A—Q • Directors: Style and Substance in Cinema (4) Staff [C]
One or more of the following directors will be studied: A: Bunuel, B: Godard, C: Rossellini, D: Eisenstein, E: Keaton, F: Renoir, G: Ophuls and Jancso, H: Kurosawa, I: Welles, J: Huston, K: Hitchcock, L: Truffaut, M: Fellini, N: Chabrol, O: Antonioni and Visconti, P: Chaplin, Q: Ford/Capra. (Repeatable for credit up to 20 units.)

156 • Hitchcock—Hawks: Rethinking the Auteurs (4) Staff [C]
A look at representative and often rare Hitchcock and Hawks films. Readings of the major auteurist criticism of them, and an attempt to widen the scope of critical inquiry by various perspectives that have been ignored or undeveloped.

158 • Theatre and Film (4) Staff [C]
Not a study of plays into films, but an exploration into the intertwined life of theatre and film: similarities and differences, the notion of stardom in each, Victorian melodrama, Meyerhold, Reinhardt, German Expressionism, high comedy, Brecht, and Artaud.

159 • Heroes, Heroines and Sex Roles in the Hollywood Film (4) Staff [C]
An examination of changing views of the American man and woman, and the relations between them, as seen in a number of significant Hollywood films of different genres and from different eras.

165 • Film and Social Reality (4) Lawton [C]
An inquiry into the treatment of physical and social reality by selected filmmakers since film's inception. Manipulation and relativity of film truth will be the major concern. Lumiere, Melies, Dziga-Vertov, Flaherty, Wiseman, Fellini, Bunuel, Rossellini, Pontecorvo, and others.

170 • The Musical Film (4) Staff [C]
The advent of the musical film, from silent film musicals to the present, and including analysis of dance styles and film choreography.

180 • Gangsters, Detectives and the World of Film Noir (4) Staff [C]

America's darker side as seen through both classic and unfamiliar gangster, detective, and crime films ranging from von Sternberg's *Underworld* through Polanski's *Chinatown*. Readings in Hammett, Chandler and Cain and screenings of the films inspired by their books.

186 • Renoir and Lang (4) Staff [C]

A study of major works, both European and American, of two directors whose different approaches to the art of film have proved seminal in shaping the development of the medium.

188 • Basic Screenwriting (4) Staff

A serious investigation of screenwriting with special emphasis on the conventional narrative film. Students will be required to complete a partial shooting script. May be taken up to 12 units, but only 8 units will count toward the Film Studies major.

190 • Seminar in Semiology (4) Staff [C]

Prerequisite: Instructor's permission.

Investigates the semiological approach of analysis. Main readings will be from the works of Umberto Eco, Roland Barthes, Levi-Strauss.

191 • Seminar in Film Criticism (4) Staff [C]

Prerequisite: Instructor's permission.

Intensive practice in film criticism through a close examination of selected Hollywood films from different periods.

192A—B • Seminar on Theory of Film (4) Rossi [C]

History and origins of modern film theories. A: Early theories (surrealism, expressionism, Russian realism, Eisenstein, Kracauer, Bela Balazs and Arnheim) till WWII. B: Neo-realism, Bazin, the structural and semiological critics.

193 • Film Narrative: Examples and Theory (4) Staff [C]

An investigation of major aesthetic and theoretical problems concerning film narrative. Covered will be the classic film, the modernistic film, and the breakdown of classical conventions.

194 • Group Studies for Advanced Students (2-4) Staff

Prerequisite: Upper Division standing, consent of instructor and department chairman.

Group studies designed to meet special curricular problems.

198 • Readings in Film Studies (1-5) Staff

Prerequisite: Departmental approval, instructor's approval, Film Studies major and junior status.

To allow the student to do directed research in a subject of his choice which may be so specialized as to require special instruction on a tutorial type basis.

***199 • Independent Studies** (1-5) Staff

Prerequisite: Departmental approval, instructor's approval, Film Studies major and junior status.

Independent studies in a major theme or director in the history of film.

*See N-2 for 198/199 independent studies unit limitations.

French and Italian

French

Professors

¹Anne G. Cushing, Ph.D., *University of Colorado; 19th and 20th century French poetry, Apollinaire; Comparative Literature.*

Genevieve Delattre, Ph.D., *Columbia University; 19th century French literature, Balzac.*

²Andre Malecot, Ph.D., *University of Pennsylvania; phonetics, linguistics.*

³Jack Murray, Ph.D., *Yale University; 20th century literature, Proust.*

Mark J. Temmer, Ph.D., *Yale University; 18th century French literature, Rousseau.*

Ronald W. Tobin, Ph.D., *Princeton University; 17th century French theatre, Racine.*

Philip D. Walker, Ph.D., *Yale University; 19th century French literature, Zola.*

Associate Professors

William J. Ashby, Ph.D., *University of Michigan; Romance philology, linguistics (Chairperson).*

³Naomi Greene, Ph.D., *New York University; 20th century literature, film, Artaud.*

²Ernest Sturm, LL.B., *New York University School of Law, Ph.D., Columbia University; 18th century novel.*

Assistant Professors

Cynthia Brown, Ph.D., *UC Berkeley; Late Medieval-early Renaissance literature.*

¹Edwin M. Duval, Ph.D., *Yale University; Renaissance French literature, the Baroque.*

Lecturers

Alexandre Rainof, Ph.D., *University of Michigan; Translation/Interpretation.*

Jacqueline Simons, *Diplome d'Etudes Superieures; Supervisor of Teaching Assistants.*

Professors Emeriti

Robert Beachboard, *Docteur de l'Universite de Paris*

Italian

Professors

³Alfredo A. Bonadeo, Ph.D., *UC Berkeley; Renaissance literature, Machiavelli (Vice Chairperson).*

Associate Professors

Patrizio Rossi, Ph.D., *UC Berkeley; Modern Italian literature, film.*

Lecturer

Harry Lawton, M.A., B. Litt. (Oxford); *Modern Italian poetry, Italian cinema.*

Concerns of the department

The majors in French and Italian are primarily liberal arts majors. They are not restricted to prospective teachers or to those preparing themselves for careers in government

¹Absent on leave, Fall 1980

²Absent on leave, Winter 1981

³Absent on leave, Spring 1981

or business. They are designed above all for those who wish to receive solid training in a humanistic discipline, enriching themselves through the study of a great foreign culture and contributing in the process to American civilization and the growth of international understanding.

The Department of French and Italian makes available to all students courses in French and Italian literature, including courses in English translation. These may be taken as electives or in satisfaction of the General Education Humanities requirement. Authors and movements whose contributions to world culture have been most considerable are stressed—e.g., Dante, Baudelaire, surrealism, or existentialism. The Department also provides courses on the French and Italian film and other French and Italian cultural institutions; provides instruction in the French and Italian languages and French linguistics; offers a majors leading to the Bachelor of Arts degree in French or Italian; offers graduate programs leading to the M.A. and Ph.D. degrees in French literature or a Ph.D. in linguistics; offers a one-year post baccalaureate Translator-Interpreter program that prepares the student for qualification as a certified translator-interpreter of French; and collaborates with other departments in the Comparative Literature undergraduate major program, the Film Studies program, the Medieval Studies program, and the Renaissance Studies program.

Departmental advising and publications

The French Department has an undergraduate adviser and a graduate adviser. The Italian Department has an undergraduate adviser.

Publications originating from the Department are three brochures: *"Why Study French or Italian at UCSB?"*, *"An Undergraduate French Major Option in Linguistics and Literature,"* and a yearly *"Graduate Study in French"*. We also distribute one-page descriptions of our French major, Italian major, and French 14 program. A brochure detailing the Translator-Interpreter program is available.

Language program

The study of foreign languages traditionally has been considered an essential part of a truly superior education. To assist students in their attempt to achieve their linguistic objectives, the Department offers a variety of courses including, individualized instruction, a "four-skill" track, and conversation.

Students enrolled in individualized instruction (French 14 or Italian 14) proceed at their own pace. Whenever they have demonstrated a satisfactory performance in any one segment, they may go on to the next higher segment.

Students who have received a D in language courses 1-6 are strongly advised not to continue to the next higher course without mastering the material in the preceding course, either by repeating that class or by independent review. Students who have received an F or a NP in one of these courses may not continue to the next higher course until they have repeated and passed the course failed or otherwise demonstrated the proficiency required for admission to the next higher level.

The Department reserves the right to place students in courses from which they can best profit. Students who have completed a more advanced course in a sequential series (e.g., French or Italian 1, 2, 3, 4, 5, 6) will not be permitted to take a course that is lower in the series. Students will not be permitted to take two courses of a sequential series concurrently. Students must complete French 26 *prior* to taking upper division courses. Students who have completed an upper division course will not be permitted to take a lower division course in the department, with the exception of French 18A—B, 19A—B—C. Students who possess a native command of a foreign language will not be permitted to enroll in lower division courses pertaining to that language.

Linguistics and Literature option

This program of study for majors introduces students to the history and basic theories of general linguistics, surveys the general aspects of the development of modern French from its origins to modern times, examines in detail the phonology, morphology, and syntax of contemporary French, provides the opportunity to outstanding students to participate in original research projects, develops the students' mastery of the French language, and also introduces them to selected aspects of French literature. (Students who select this option should note that their transcripts and diplomas will not acknowledge completion of the option. The major will be listed as "French.")

Bachelor of Arts—French

Preparation for the major

Required:

French **14 (Individualized Instruction)** or

French **1, 2, 3 (Elementary French)**

French **4, 5, 6 (Intermediate French);**

French **26 (French Composition);**

History 4A—B—C and Philosophy 20A—B—C are strongly recommended.

Students who wish to make French their major subject must have maintained at least an average grade of C in the college courses in French taken prior to the junior year. Students transferring from other institutions may be tested by examination.

Upper Division major

Required: Forty-four upper division units in French. Of these, four units must come from French 101, Advanced Reading and Composition, and twelve units must come from French 109A—B—C, Introduction to French Literature, or its equivalent (an "equivalent" course is any literature course that covers approximately the same material as any one quarter of French 109 and is not in translation); twelve units must come from literature courses taught in French; and sixteen units must come from other upper division courses (e.g., French literature, film, language, culture). Of these sixteen units, a maximum of eight units may be from French courses taught in English (e.g., French 164X—Rousseau and the Confessional Urge, or French 178X—French Film: Theory and Practice).

French majors interested in French Linguistics and Literature may elect to complete the following upper division optional program in place of the upper division major requirements above.

Linguistics and Literature Option

Required: Forty-four upper division units in French, including

French **101 (Advanced Reading and Composition)**

French **102 (Background of Modern French)**

French **103A—B (Phonetics)**

French **105A (Morphology)**

French **105B (Syntax)**

French **109ABC (Introduction to French Literature)**

The remaining 8 elective units may be selected from any additional upper division courses in the French Department.

Education Abroad Program Requirements

Majors who go to France under the Education Abroad Program must complete at least eighteen units of upper division courses in the department on the Santa Barbara campus. The Department will grant only up to four units for each of the three segments of French BC 109A—B—C toward the fulfillment of major requirements. (For other regulations regarding EAP courses, please consult with the EAP or with the Department Chairperson.)

Bachelor of Arts—Italian

Preparation for the major

Required:

Italian **1, 2, 3 (Elementary Italian)**

Italian **4, 5, 6 (Intermediate Italian)** or

Italian **14 (Individualized Instruction)**

History 4A—B—C and Philosophy 20A—B—C are strongly recommended.

Upper Division Major

Required: Forty upper division units in Italian. Of these, 12 units must come from:

Italian **110A—B—C (Dante: La Divina Commedia)**

and 28 units from all other upper division courses in the Italian Department. A maximum of 8 units may be from Italian courses conducted in English.

Translator-Interpreter Certificate in French

Admission Requirements and Prerequisites

In addition to fulfilling the general requirements for admission to graduate status, students must normally meet the following departmental requirements:

1. Degree Requirement: a bachelor's degree from a recognized college or university.

2. Academic Requirement: an undergraduate major in French or a major in another field (such as a second foreign language, History, Economics, or Political Science) and at least 24 upper division units in French.

3. Practical Requirements: one year of study at a recognized university in a French-speaking country;
or extensive work experience requiring the use of French,
or bilingualism (oral and written);
or a graduate degree in French.

(Note: Requirements 2 and 3 may be waived in special cases.)

Certificate Requirements

This program is a one-year, postgraduate program consisting of a sequence of five specialized courses (24 units) and three or four elective upper division courses (12-16 units). The specialized courses (French 400—421) are devoted to the techniques and practices of translation and interpretation from French to English and from English to French and, as such, are not suitable for remedial language study. They may not normally be applied toward graduate degrees in French.

Upper division elective courses (12-16 units) allow students to plan individualized programs tailored to their own particular needs and interests. These electives must be approved by both the director of the Translator-Interpreter Program and the course instructors.

Students qualified in both French and Spanish are encouraged to take a combined program.

Upon successfully passing a series of final qualifying examinations, students will receive a certificate attesting to their competency as translators and interpreters. The standards for certification must necessarily be high, since the success of the program depends almost entirely upon the demonstrated proficiency of the certificate holders once they have entered upon their careers.

Summer Institute of French Language and Culture

A three-summer intensive program culminating in the M.A. degree is designed primarily for secondary school teachers of French. Since it is not a research oriented degree, graduates of this program will not be eligible to enter the doctoral program. Residence at the Institute and observance of a "no English" rule are required. The 1980 session will begin June 30 and terminate August 16.

1. Prerequisites:

In addition to fulfilling the general requirements for admission to graduate status the student must have an undergraduate major in French or its equivalent and must demonstrate a proficiency in speaking and writing French.

2. Course Work:

The M.A. requires 40 units (no thesis), as follows:
Group A, language (4 units each),

214 Advanced Phonetics,

215 French Linguistics,

210 Advanced Oral Expression:

Two of the following:

211 Advanced Written Grammar,

212 Advanced Stylistics,

213 Literary Translation,

Group B, culture (4 units each),

251 Studies in French Literature,

252**Fine Arts and French Society

253*French Music and Society,

254 French Civilization,

255 Seminar on a Selected Topic

Courses 251 and 255 may each be repeated once with a different topic as a substitute for one course in Group A courses if the student demonstrates a high proficiency in the relevant language skills.

Course 596 (Directed Reading and Research) may, with the approval of the Director, be substituted for one course in Group A, if a high level of proficiency in that area can be demonstrated.

Recommended Preliminary Readings: Students can do the reading for most Group B courses during the winter. Especially recommended for those wishing to take four courses in one summer. Lists appear in the Winter Bulletin published in December and available upon request.

3. *Transfer Credits:*

Up to eight units of appropriate work in an accredited graduate program in French will be accepted.

4. *Other:*

For information and application forms, write to Summer Session Office, University of California, Santa Barbara, CA 93106.

Master of Arts—French

Admission Requirements

Applicants must hold a bachelor's degree or its equivalent from an accredited institution. The overall grade point average for upper division work must be strong, and for the subject area in which the student wants an advanced degree or credential, it should be excellent.

Degree Requirements

The French Department offers the M.A. degree under Plan I (thesis) and Plan II (without thesis).

1. *Prerequisites:*

In addition to fulfilling the general requirements for admission to graduate status, the student must have an undergraduate major in French or its equivalent. Students who are deficient in this respect will take the necessary undergraduate courses to make up the deficiency before beginning work in the master's program.

2. *Course Work:*

- a. In Plan I, the candidate is expected to take 44 units of work; 36 units must be course work and 8 units must be thesis work. Of the 36 units of course work, 24 units must be in graduate courses (*i.e.*, "200" and "500" courses).
- b. In Plan II, the candidate is expected to take 44 units of course work, 32 of which must be in graduate courses (*i.e.*, "200" and "500" courses).
- c. All candidates must satisfy the following requirements: demonstrate a knowledge of French phonet-

ics equivalent to French 103AB (by evidence of transcript, by taking course 103, or by special departmental examination); a knowledge of French philology equivalent to French 204A and B (by evidence of transcript, by taking course 204A and B, or by special departmental examination); and a reading knowledge of one additional relevant foreign language. It is recommended that students have a background in Latin equivalent to a year course in college prior to taking French 204A and B.

- d. Courses in other departments (English, foreign language, history, philosophy, art history, music, etc.) may, with the approval of the graduate adviser, be counted toward the degree if they have relevance to the student's special program.

3. *Examinations*

- a. All candidates must pass a written comprehensive examination. This examination may be either of the following:

Exam A, designed for those who are primarily interested in literature. The comprehensive examination will consist of a series of short essays on the six main periods of French literature, to be written in French.

Plan B, designed for those who are interested in linguistics. The comprehensive examination will consist of a series of essays on at least three periods of French literature and up to three areas of linguistics (descriptive phonetics, syntax and semantics, philology, etc.), to be written in French. Students who intend to enter the Ph.D. program under Exam A, may write a maximum of two essays on linguistics. Students planning to pursue a Ph.D. in French linguistics will have to take three examinations in linguistics.

- b. All candidates must also pass oral examination. For candidates in Plan I, this examination will consist of a defense of the thesis. For candidates in Plan II, the examination will consist of a half-hour discussion on an area of the candidate's studies to be chosen in consultation with the graduate adviser.

4. *Other*

All candidates must demonstrate a proficiency in speaking and writing French. All candidates are required to serve as Teaching Assistants.

Doctor of Philosophy—French

1. *Prerequisites*

- a. See Section **K** on admission to graduate status and on general requirements concerning residence, courseload requirements, foreign languages, the oral qualifying examination, and the dissertation and its defense.
- b. Completion of an M.A. degree in French from UCSB or a degree based on equivalent training. (See preceding section on requirements for the M.A. degree.)

2. *Course Work*

- a. Students will take those courses recommended by their advisers as useful in preparing for the comprehensive examination. (Note, however, that students

**even years

*odd years

holding Teaching Assistantships will be expected to enroll in a minimum of two graduate courses each quarter.)

- b. Students must also satisfy the requirement of a reading knowledge of two relevant foreign languages.

3. Examinations

- a. All students must pass a series of written comprehensive examinations. These examinations may be either of the following:

Exam A, designed for those who are primarily interested in literature. Students who choose Exam B for the M.A. comprehensive examination with one or two linguistic essays (see above) will be required to make up their deficiency in the untested periods of literature by taking the appropriate examinations at the first M.A. examination session following their admission to the doctoral program.

Students take four examinations normally timed as follows:

In the spring of the first year, an examination on a period selected by the candidate.

In the fall of the second year, two examinations on a genre selected by the candidate. Students may substitute for genre some other important aspect of French literature studied diachronically.

In the spring of the second year, an examination on an author selected by the student. A well-defined literary movement or critical school may be substituted.

All examination topics must be approved by the student's doctoral committee.

Exam B, designed for those who are interested in linguistics, philology, or phonetics. The major area will be either French phonetics and morphophonology, French syntax and semantics or diachronic French linguistics. The minor may include one or both of the areas remaining, and/or other areas of linguistics such as semiotics, sociolinguistics, the history of linguistics, Medieval French literature (for those specializing in diachronic linguistics), history of another Romance language. Programs of study will be planned by the student and the guidance committee. Most course work is individualized.

Students take examinations normally timed as follows:

In the spring of the first year, one (or two) examinations in any area(s) approved by the committee.

In the fall of the second year, two (or one) examinations in any other area(s) approved by the committee.

Note: At least one of these first three examinations must be in the student's major area of specialization.

In the spring of the second year, a second examination in the major area of specialization.

The dissertation may be, but will not necessarily be, on a topic falling within the student's major area. In any case, the dissertation must be on a topic within

the competence of the faculty of the department.

- b. All students who have successfully passed all of the written comprehensives must also pass a qualifying oral examination in order to be advanced to candidacy.

4. Dissertation

Following formal advancement to candidacy, the student must present a dissertation which gives evidence of ability to conduct independent research of high quality.

5. Other

All students in the doctoral program are required to serve as Teaching Assistants.

Teaching credentials

Students who complete a major in French or in Italian may be eligible to pursue a California teaching credential. Specific details of the State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180 Phelps Hall.

Certain majors may require students contemplating a teaching career to complete specified courses within the major. The teaching major in French should take as many courses as possible from the series 103, 105, and 106 among the forty upper division units required for the major as specified above. French conversation courses are highly recommended for teaching majors. The teaching major in Italian does not differ from the regular major. These course requirements should be satisfied within the bachelor's degree program and prior to formal admission to the credential program. For further information concerning teaching majors the student must confer with designated counselors in French or in Italian.

Career opportunities

A knowledge of French or Italian, or both, is useful or necessary in a large number of organizations in business, industry, the civil service, education, library science, the media, religion, science, the social sciences, social service, and travel and tourism. Specific careers that might be mentioned in this connection include, among others, diplomats, translators, interpreters, foreign correspondents, specialists in international law, travel agents, language teachers, English, French, and Italian literature specialists, linguists, art historians, singers, and businessmen engaged in overseas enterprises. Many students in the humanities need to master at least one foreign language.

For additional information, consult *Foreign Languages and Careers*, written by Lucille J. Honig and Richard I. Brod, and published by the Modern Language Association, 62 Fifth Avenue, New York, N.Y. 10011, reference copies of which are available in the French and Italian Department office.

Correspondence information

Department of French and Italian, Phelps Hall, Room 5206, University of California, Santa Barbara, California. Phone: (805) 961-3111.

French Lower Division courses

Please note: It is highly recommended that students take the French Placement Examination administered by the Department to determine the level of French they should take in the Department's language program.

Students wishing to begin the study of French may now choose between French 1-6 and French 14 Individualized Instruction 1-6. To help them decide which they may prefer, the main characteristics of each course are listed below.

Comparison of French 1-6 and 14

French 1-6

All students progress at the same rate of speed and cover the same amount of material.

At the end of the quarter all students who pass receive four units of credit.

Mastery of each instructional unit is encouraged but not required before the student proceeds to the next. As a result: the final grades for the quarter will be in the traditional range of A through F.

Class and laboratory attendance are required.

The instructor is primarily responsible for directing student learning.

Tests are given to all students during regular classes at fixed times.

French 14

Each student progresses at his own rate of speed and covers differing amounts of material.

At the end of the quarter each student receives the units of credit he has earned (from an expected minimum of one to a theoretical maximum of 24).

Mastery of each instructional unit is required before the student proceeds to the next. As a result: the final grade for the quarter will normally be A or B for all students.

Class (five meetings per week) and laboratory attendance are not controlled but highly recommended.

Students are primarily responsible for directing their own learning (receiving suggested study procedures and individual guidance when needed). Also new vocabulary patterns are presented before the individual tackles them.

Tests are given outside regular class hours to each student when he is ready.

To sum up, French 1-6 is best for those students who prefer to stay with a group with maximum guidance from an instructor, while French 14 is for those who wish to assume more responsibility for their own learning. French 14 is also for those who prefer to advance at a pace other than that imposed in French 1-6, or—to put it another way—who wish to earn either fewer or more than four units of credit per quarter (each student will wish to adjust the remaining course load according to the approximate number of units planned in French 14). Entrance into the French 14 Program is by sign-up in the Department office only. (Sign-up begins eight weeks before the quarter.) Please note: All levels of 14 are not offered every quarter.

1 • Elementary French (4) Staff

The beginning course in French. Course taught in French. Oral skills stressed. Grammar rein-

forced by dialogue memorization and pattern drills. Correct pronunciation and the ability to distinguish sounds emphasized. Question-answer technique helps students transfer patterns to free conversation. Lab assignment given daily. Not taught in spring quarter.

2 • Elementary French (4) Staff

Prerequisite: French 1 or equivalent.

A continuation of French 1. Course taught in French. Readings, essays, French geography included, the latter by means of slides. Lab assignment given daily.

3 • Elementary French (4) Staff

Prerequisite: French 2 or equivalent.

A continuation of French 2. Course taught in French. Emphasis on readings and short essays rather than on dialogues. Slide programs given to encourage class discussion. Lab assignment given daily.

4 • Intermediate French (4) Staff [D]

Prerequisite: French 3 or equivalent.

Taught in French, the course reviews basic structures with new elements added. Vocabulary development stressed by means of original sentences and weekly essays. Reading selections to help develop oral-written correspondences included in the course. Lab assignment given daily.

5 • Intermediate French (4) Staff [D]

Prerequisite: French 4 or equivalent.

A continuation of French 4. Course taught in French. Basic structures reviewed. Supplementary readings, such as *L'Étranger*, *Huis Clos*, etc., are emphasized. Lab assignment given daily.

6 • Intermediate French (4) Staff [D]

Prerequisite: French 5 or equivalent.

A basic text, used for the acquisition of vocabulary and the practice of essay writing, also stresses aspects of civilization and is complemented by readings of poems, plays, or novels. Section (02) is a film class.

8A • French Conversation (2) Staff

Prerequisite: French 3 or equivalent.

8B • French Conversation (2) Staff

Prerequisite: French 4 or equivalent.

8C • French Conversation (2) Staff

Prerequisite: French 5 or equivalent.

11A—B • French for Graduate Students (4-4) Staff

A service course for graduate students from other departments who need to satisfy language requirements. A—Elementary level and B—Intermediate.

14 • Individualized Instruction 1-6 (1-24) Staff [D-only for increments of 3 or more units each completed above level 12.]

Student proceeds at own pace in completing achievement levels centered around units of learning with self-correcting oral and written tests. Each achievement level, equivalent to one quarter, must be completed before proceeding to next level. Two group meetings, three consultations per week. All levels of French 14 are not offered every quarter.

18A—B • Advanced French Conversation (2-2) Staff

Prerequisite: French 6 or 8C or equivalent.

A: Political, philosophical, and sociological themes. B: French literature and literary criticism.

19A—B—C • Intensive Practice in Spoken French (4-4-4) Staff [D]

Prerequisite: French 6 or 8C or equivalent.

An intensive encounter with spoken French designed to develop communication skills. Systematic assimilation of oral structures through the study of film, sound tracks, and tapes. Exercises in oral expression. Active expansion of vocabulary and means of expression.

25X • Seminar on French Literature in Translation (4) Staff [D]

Discussion of subjects of major interest pertaining to French literature and French culture in general—for example, surrealism, existentialism, the avantgarde, the French film, modern French drama, French sources of American culture. Subject will vary with instructor. *This course is open only to freshmen and sophomores.* Discussion and readings in English.

26 • French Composition (3) Staff [D]

Prerequisite: French 6 or equivalent.

Primarily designed to help students develop a writing skill in the French language. French grammar is reviewed but the coverage of this subject is limited to concrete situations arising from student's own compositions. Especially difficult grammatical topics are discussed upon students' request.

27 • Development of Advanced Reading Skill in French (3) Staff [D]

Prerequisite: French 6 or equivalent.

Designed to guide intermediate students of French through the difficulties involved in reading, within a reasonable amount of time, unabridged and unaltered French texts of considerable length, such as are assigned in courses of French literature. It is highly recommended that French 26 be taken concurrently.

41FS • Freshman Seminar. (3)

Myth in Medieval Romance. Application of research in theories of myth and mythic narrative and Middle English verse romances. Open to freshmen only.

Upper Division courses

Please note: French 26 and 101 (or the consent of the department) is the prerequisite for all upper division courses taught in French. French majors should note that no more than eight units of French courses taught in English may be counted toward the major.

101 • Advanced Reading and Composition (4) Staff [D]

Prerequisite: French 26.

Training in analysis of literary texts by French critical techniques and in writing compositions. *Prerequisite for all upper division courses taught in French.*

102 • Background of Modern French (4) Ashby [D]

The origins of the French language and an overview of its linguistic development with emphasis on the historical and cultural background. Lectures and readings in French.

102X • Social Attitudes and Language (4) Ashby [D]

A new approach to language, stressing the development of major modern Western languages, as affected by social and cultural factors. Lectures and readings in English.

103A—B • Phonetics (4-4) Malecot [D]

Prerequisites: 103A is prerequisite to 103B.

Basic concepts of articulatory phonetics, phonetic transcription, and a detailed analysis of the conversational style of the Parisian professional class. Practice with recorded models in the language laboratory. Lectures and readings in French.

103C • Poetic Diction (4) Malecot [D]

Prerequisites: 103A-B.

A detailed analysis of the phonetic differences between conversational style and poetic diction. Practice in the application of these principles to the recitation of representative French poems from the Middle Ages to the present.

104A—B • Introduction to Stylistics (4-4) Staff [D]

Comparative stylistics, French and English. Theory and practice. Lectures and readings in French.

105A • French Morphology (4) Malecot [D]

An analysis of the morphology of Modern French.

105B • French Syntax (4) Ashby [D]

An analysis of the syntax of Modern French.

105C • Problems in French Linguistics (4) Ashby [D]

A few selected problems in the linguistic analysis of French will be studied in depth. The specialized focus will change from year to year. May be repeated with different topics for a maximum of 12 units. Lectures and readings in French.

106A—B—C • History of French Culture (4-4-4) Delattre [D]

A study of the historical development and principal achievements of French culture from its origins to the 20th century. Lectures and readings in French.

108A—B—C • Introduction to Translation and Interpretation (4-4-4) Staff [D]

An introduction to the uses and techniques of translation and interpretation to and from French. Lectures, readings, and exercises in English and French.

109A—B—C • Introduction to French Literature (4-4-4) Staff [D]

An introduction to French literature, spanning from its medieval origins to the contemporary period. Authors and movements whose contribution to world culture has been most considerable will be stressed. Lectures and readings in French.

109X—Y—Z • Survey of French Literature in Translation (4-4-4) Staff [D]

Great masterpieces of French literature in translation. (May not be taken for major, minor, or graduate credit.)

115 • Explication de Textes (4) Delattre [D]

A detailed study of literary structure based on analysis of short excerpts from various periods and genres. Lectures and readings in French.

136A • Medieval Epic and Romance (4) Staff [D]

The rise of medieval narrative literature at the courts of Northern France, 1100-1280, with emphasis on the *chanson de geste* and Arthurian romance. Lectures and readings in French.

136B • Lyric Poetry of the Middle Ages (4) Staff [D]

Four centuries of French poetry (1100-1463), from the earliest songs of the *troubadours* and *trouvères* to the age of Villon. The importance of music, dance, oral recitation and dramatic representation in medieval lyric poetry. Thematic and stylistic analyses of selected texts from courtly and popular traditions. Lectures and readings in French.

136C • Literary Aspects of Medieval Culture (4) Staff [D]

A topical study of several aspects of medieval culture as reflected in saints' lives, dramatic works, prose chronicles, lapidaries, bestiaries and didactic treatises. Lectures and readings in French.

137X • Love in the Medieval French Narrative (4) Staff [D]

A study of seven medieval French guides to the art of love and of the thematic treatment of love in a variety of texts including *Tristan et Iseut*, the *lais* of Marie de France, the romance of Chretien de Troyes, *The Romance of the Rose*, *Aucassin and Nicolette*, and the *fabliaux*. Lectures and readings in English.

138X • The Medieval French Drama (4) Staff [D]

A study of the origins of Medieval European drama and of the development, staging, and critical theory of French drama with readings of major dramatic works to 1500. Lectures and readings in English.

140A • Rabelais (4) Duval [D]

A detailed study of *Gargantua and Pantagruel* in the contexts of popular culture; the Biblical, Classical and Scholastic heritage; the intellectual avant-garde of Humanism. Lectures and readings in French.

140B • Renaissance Poetry (4) Duval [D]

A study of the great masterpieces of French Renaissance poetry with special attention given to poets of the "Ecole de Lyon" and the "Pléiade." Works by Marot, Scève, Du Bellay and Ronsard. Lectures and readings in French.

140C • The Renaissance Literature of Ideas (4) Duval [D]

The expression, transformation and transcendence of ideas through new literary forms of the late Renaissance. Philosophical, political and religious works by Montaigne, Ronsard and d'Aubigné.

141X • Rabelais in Translation (4) Duval [D]

A study of the works of Rabelais in an attempt to discover in them the expression of a popular

culture parallel to official literary culture but most often excluded from officially recognized literature. Lectures and readings in English.

149 • Poetry and Music of the French Renaissance (4) Duval, Prizer

Interdisciplinary study in the relationship between text and music in the Renaissance *chanson*. Works studied include poetry of Marot, Ronsard, Baïf, music of Josquin, Claudin, Lassus. May be taken for credit only once as either French 149 or Music 189.

150A • Mannerism and Classicism (4) Tobin [D]

Analysis of literary, philosophical, and cultural trends of early seventeenth century. Esthetics of mannerism (Theophile, Saint-Amant), classicism (Malherbe, Racan), Preciosite (Voiture, Montausier), French mannerist tragedy (Rotrou, Corneille). Birth of modern rationalism and importance of Neo-Stoicism in Descartes' works. Class reading and discussions supplemented by lectures on aspects of culture (religion, politics, society). Documentary films used. Lectures and readings in French.

150B • Baroque (4) Tobin [D]

The rise of baroque spirit in all literary genres between 1660 and 1680. Pascal, Racine, Molière, La Fontaine, La Rochefoucauld, Mme de La Fayette studied as examples of that ideal which attempts a balance, through tension, of mannerism and classicism. Discussions of baroque art and architecture will supplement literary analyses. Lectures and readings in French.

151X • Emotion and Intellect in 17th Century French Culture (4) Staff [D]

An exploration of selected aspects of scientific, artistic, political, philosophical and religious life in 17th century France. Lectures and readings in English.

152 • Aspects of the Seventeenth Century (4) Tobin [D]

Prerequisite: French 109B.

A course whose specialized focus changes from quarter to quarter. May be repeated with a different topic for a maximum of 12 units. Lectures and readings in French.

160A—B—C • The Eighteenth Century (4-4-4) Sturm, Temmer [D]

Development of libertine thought traced from Saint-Evremond, Fontenelle and Bayle to theories of Montesquieu, Diderot, Voltaire, Rousseau. Problems of the emergence of the novel, autobiography, satire studied. Lectures and readings in French.

161X • The Utopian tradition (4) Sturm [D]

Beginning with utopian thought in the French Enlightenment (Diderot, Rousseau, Voltaire, and others), this course will analyze the aspirations of major writers like Saint-Simon, Fourier, Sartre, and Marcuse towards a socially perfect order and the problems arising therefrom. Lectures and readings in English.

162X • Contrasts in Wit and Satire: Candide and Rasselas (4) Temmer [D]

The course will focus on the stylistic and thematic structure of Voltaire's masterpiece as well as on his refutation of philosophical optimism. Sam-

uel Johnson's *Rasselas* will be studied by way of contrast. Lectures and readings in English.

163X • Diderot, Fiction and Role Playing (4) Temmer [D]

A study of Diderot's concern with human happiness (sexual freedom in *The Supplement to the Voyage of Bougainville*), with the theory and practice of the novel (*Jacques the Fatalist*), with acting on the stage (*Paradox on the Comedian*), with the alienated man (*Rameau's Nephew*). Lectures and readings in English.

164X • Rousseau and the Confessional Urge (4) Temmer [D]

An in-depth analysis of Rousseau's *Confessions*, one of the most influential documents of western civilization. Also to be studied *The Fifth Reverie of the Solitary Wanderer*. Lectures and readings in English.

165X • The Myth of Don Juan in Literature and Music (4) Temmer [D]

The course traces the metamorphoses of the enigmatic figure of Don Juan from his first appearance in *The Trickster of Seville* by Tirso de Molina through the ages—Moliere, Mozart, Byron, Shaw, Horvath, Frisch and Paul Goodman's psychoanalytical study.

170A • The Nineteenth Century I (4) Walker [D]

Romanticism to realism. French poetry and prose between 1800 and 1850. Readings of such authors as Chateaubriand, Lamartine, Vigny, Hugo, Musset, Stendhal, Balzac, Chief quantities of the works selected, major themes, images, techniques, kinds of creative activity involved, emergent visions of reality. Lectures and readings in French.

170B • The Nineteenth Century II (4) Walker [D]

Realism, the Parnasse, the beginnings of modern poetry. French verse and prose of the middle of the nineteenth century. Readings of such authors as Baudelaire, Gautier, Merimee, Leconte de Lisle, Nerval, Michelet, Flaubert. Lectures and readings in French.

170C • The Nineteenth Century III (4) Walker [D]

Naturalism, symbolism, decadence, the *fin de siècle*. French poetry and prose from 1870 to 1900. Readings of such authors as Zola, Mallarme, Verlaine, Corbiere, Rimbaud, Laforgue. Lectures and readings in French.

170X • Nineteenth Century French Literature in Translation (4) Walker [D]

Readings of selected nineteenth century French authors such as Hugo, Baudelaire, Mallarme, Verlaine, Rimbaud, Chateaubriand, Balzac, Stendhal, Flaubert, Zola. Lectures and readings in English.

170Y—Z • The Nineteenth Century French Novel in Translation (4-4) Delattre, Walker [D]

Readings of works of 19th-century French novelists. First quarter: Balzac, Stendhal, Hugo and other writers of the first half of the century. Second quarter: Flaubert, Zola, and other writers of the second half of the century. Principal themes, techniques, varieties of creative activity, relation-

ship with other arts and with society. Lectures and readings in English.

171 • The Romantic Movement in France (4) Delattre [D]

A study of French romanticism as expressed in literature, art, and music and in the social and political life of France between 1820 and 1835. Lectures and readings in French.

172X • Literature and the Rise of the Modern World (4) Walker [D]

A study of the role played by the creative artist in the process of cultural change: the impact of change on the artist; the opportunities that change gives the artist; the artist as world creator. Lectures and readings in English.

173 • Balzac (4) Delattre [D]

Prerequisite: French 109C.

A study of selected works by one of the world's greatest novelists and one of the chief founders of modern fiction. Lectures and readings in French.

174 • Le Roman d'éducation au 19ieme siecle (4) Delattre, Walker [D]

A study of novels dealing with the theme of the wordly education of a young man or woman.

174X • Aspects of the French Novel (4) Delattre, Murray, Walker [D]

A course whose specialized focus changes from quarter to quarter but in which reading assignments will be limited to major works by major authors, mostly of the 19th and 20th centuries, e.g., Balzac, Stendhal, Flaubert, Zola, Proust, Gide, Camus. Lectures and readings in English.

175 • The Romantic Novel (4) Delattre [D]

A study of the novel of the 1830's, its main characteristics as a new emerging literary genre and its main themes. Representative works by Balzac, Hugo, Sand, Gautier will be analyzed in depth.

176 • Symbolism in the Arts (4) Cushing [D]

Baudelaire, Mallarmé, Verlaine: their debt to art and music; their poetry as a new point of departure for artists and musicians; their esthetic in an interdisciplinary context. Lectures and readings in French. Will use slides and tapes in this course.

176X • The Symbolist Heritage (4) Walker, Cushing [D]

A study of key poems and prose texts which throw light on aspects of 19th century symbolism. Lectures and readings in English.

177X • Literature and Religion in Modern France (4) Walker [D]

Religious aspects of French fiction and poetry since the French Revolution. Readings of selected authors such as Hugo, Balzac, Flaubert, Baudelaire, Huysmans, Claudel, Gide, and Mauriac. Lectures and readings in English.

178X—Y—Z • French Film: Theory and Practice (4-4-4) Greene [C]

A study of the various film movements in France (surrealism, new wave, cinema verite, political filmmaking of the 1960's) through the analyses of texts (especially Cocteau, Bazin, the Dziga

Vertov group) and films (by Cocteau, Renoir, Godard). Lectures and readings in English.

179X • Decadence (4) Murray, Greene [D]

A study of the decadent phenomenon as seen in such writers as Lautreaumont, Proust, Gide, Celine, Genet, selections to be based on available translations. The course will be of interest to students in art and music as well as in literature. Lectures and readings in English.

180A • Twentieth Century Poetry (4) Cushing, Murray, Greene [D]

Readings in such modern poets as Apollinaire, Valery, Desnos, and Ponge with appropriate background materials. Lectures and readings in French.

180B • Twentieth Century Novel (4) Cushing, Murray, Greene [D]

Readings in such modern novelists as Proust, Gide, Malraux, Sartre, and Camus with appropriate background materials. Lectures and readings in French.

180C • Twentieth Century Theatre (4) Cushing, Murray, Greene [D]

Readings in such modern playwrights as Cocteau, Giraudoux, Anouilh, Sartre, Becket, and Ionesco with appropriate background materials. Lectures and readings in French.

180X • Existential Literature in Translation (4) Murray [D]

Readings in fiction, drama, and philosophical essays from the French existentialist movement. Readings will include Jean-Paul Sartre, Albert Camus, Simone de Beauvoir.

180Y • Proust in Translation (4) Murray [D]

A close study of several volumes of Marcel Proust's "Remembrance of Things Past." The major Proustian themes will be considered, as well as the principal features of Proust's style.

182X—Y • The Twentieth Century French Novel in Translation (4-4) Cushing [D]

The evolution of contemporary French fiction. First quarter: the influence of symbolism—Valery, Gide, Mauriac, and others. Second quarter: the growth of the new novel—Breton, Sartre, Robbe-Grillet, Beckett, and others. Lectures and readings in English.

183X • From Existential Phenomenology to Structuralism (4) Sturm [D]

Intellectual movements in post-war France. Critical readings and discussion in literature, psychoanalysis, art and systems. Sartre, Lévy-Strauss, Lacan, Barthes, Foucauld, and others.

184A—B • Contemporary French Poetry (4-4) Cushing [D]

From Baudelaire to Prevert. a critical study of significant poems since 1857, against the background of Parnassian, symbolist, cubist and surrealist ideas. Study of poetic materials and techniques. Several short papers, explications de texte, practice in translation. Lectures and readings in French.

184X • French Novel Into Film (4) Staff [C]

The different ways of transforming a novel into a

feature film will be studied. Lectures and readings in English.

184Y • French Film Directors (4) Staff [C]

A study of selected works of two or three major French film directors such as Rene Clair, Robert Bresson, Jean Vigo, Alain Resnais, Claude Chabrol, Max Ophuls, Francois Truffaut, Jean Cocteau, Jean Renoir, and Eric Rohmer. Lectures and readings in English.

184Z • Key Works of the French Cinema (4) Staff [C]

A study of eight or so films (each by a different director), each of which is both important and artistically successful in itself and illustrative of a period or a tendency in the history of the French film. Lectures and readings in English.

185 • Women in French Literature (4) Greene [D]

Prerequisite: French 26.

The course will examine the works of several contemporary women writers, including Simone de Beauvoir and Colette. Taught in French.

185X • Contemporary French Theatre in Translation (4) Staff [D]

A study of the major French dramatists of the twentieth century, such as Sartre, Camus, Artaud, Beckett, Ionesco, Genet. Emphasis placed on contemporary plays. Lectures and readings in English.

186 • Poets and Painters in 20th Century France (4) Cushing [D]

A study of the relationships between poets and painters, concentrating on collaborations (illustrated books or *livres de peintres*). The confrontation between verbal and visual images will be a main concern of the course. Guest lecturers from the Art Department and the library will discuss aesthetic and technical aspects of the book. Lectures in French.

186X • Beckett and Godard: The Difficulties of Creation (4) Greene [D]

An examination of the way these two artists, working in different fields, are questioning the nature of their art and entertaining the idea that further creation may no longer be possible. Lectures and readings in English.

187X • French Cinema of the 1930's (4) Staff [C]

Themes and development of French cinema from 1930 to the outbreak of World War II. Lectures and readings in English.

187Y • French Cinema Since World War II (4) Staff [C]

Themes and cinematic innovations in post-war cinema of France. Lectures and readings in English.

187Z • Surrealist Film (4) Cushing, Greene [C]

A study of the surrealist film of the 1920's and 1930's. Complementary surrealist texts read. Course designed for upperclassmen and graduate students. Lectures and readings in English.

188 • The French Art Song from Symbolism to Surrealism (4) Cushing and Hsu

Prerequisite: Open to Music and French majors or permission of the instructors.

An interdisciplinary study in text-music relationship from Faure to Poulenc; from Baudelaire to Eluard. Lectures in English, readings in French. **May be taken for credit only once as either French 188 or Music 188.** French majors please note that no more than eight units of French courses taught in English may be counted toward the major.

188X • Contemporary French Drama and Film in Translation (4) Greene [C]

An examination of contemporary currents in French theater and film. Concentrates on theater of the absurd—Beckett, Ionesco and Genet, as well as such filmmakers as Godard. Lectures and readings in English.

189Y—Z • Personal Documentary: From Vertov to Cinema verite (4-4) Greene [C]

The concept of film documentary will be studied and films of various directors shown. Among the filmmakers included are Dziga Vertov, Jean Rouch, Chris Marker, Luis Bunuel. Lectures and readings in English.

***199 • Independent Studies in French** (1-5) Staff

Individual investigations in literary or linguistics fields. 199 Courses are limited to no more than five units in one quarter, no more than 15 units per year, and no more than 30 units total.

Graduate courses

200 • Laboratory for Teaching Assistants (2-4) Simons

Lab includes an orientation week, weekly meetings with Supervisor, preparation of examinations, class visitations and discussions, videotaping of classes followed by review with supervisor, occasional workshops. Units earned in this course, which is required of all TAs, do not apply toward degree. S/U grading only.

203 • Advanced French Phonetics (4) Malecot

An accelerated review of the principles covered in French 103A—B—C, but without laboratory practice. An introduction to acoustic phonetics.

204A • History of French Language (4) Ashby

Prerequisite: One year of college Latin or equivalent or consent of instructor, French 203 or equivalent.

The linguistic history of French, stressing the major changes in the phonological, morphological, and syntactic systems from Latin to modern French.

204B • Old French Philology (4) Ashby

Prerequisite: One year of college Latin or equivalent or consent of instructor. French 203 or equivalent and French 204A.

Reading and linguistic analysis of old French texts.

205 • Bibliography and Research Techniques (2) Tobin

A brief introduction to bibliographical theory and practice, the principal bibliographies and other sources of information useful for the study of

French literature, and ways of obtaining different types of information having to do with French literature. Recommended for all graduate students concerned with, or specializing in French literature.

207A • Physiological Phonetics (4) Malecot

A survey of research leading to the specification of the principal articulatory patterns of speech; bibliography; individual projects. Given in English if students from other departments are registered.

207B • Acoustic Phonetics (4) Malecot

A survey of research leading to the specification of the acoustic cues for speech; bibliography; individual projects. Given in English if students from other departments are registered.

207C • Descriptive Phonetics (4) Malecot

Prerequisite: French 103A or equivalent.

A review of the work of the principal French phoneticians since 1900; a critical analysis of research methods and presently accepted principles; bibliography; individual projects. Given in French.

208 • Studies In French Linguistics (4) Malecot

Selected problems in linguistics studied with a different specialization each quarter. This course may be repeated with different topics for a maximum of fifteen units.

209A—B • Linguistics (4-4) Malecot

A brief history of linguistics followed by a more detailed analysis of the contributions of De Saussure, Martinet, Dubois, and Ruwet. Practice in applying various methods of analysis to French sentences.

232A—B • French Literary Criticism (4-4) Staff

An examination of the history of French literary criticism and an inquiry into the different approaches employed by contemporary critics.

236 • Studies in Medieval Literature (4) Staff

Selected topics for research and discussion based on texts drawn from saints' lives, epic, courtly romance, lyric poetry, drama, and chronicles. May be repeated with a different topic for a maximum of eighteen units.

240 • Studies in the Sixteenth Century (4) Duval

A. Rabelais, B. Pleiade, C. Montaigne, D. French Renaissance Theatre, E. Renaissance Court poetry. This course may be repeated for a maximum of 20 units.

250 • Studies in the Seventeenth Century (4) Tobin

A. Corneille, B. Racine, B—B. Racine, C. Moliere, D. Pascal, E. LaFontaine, F. Moralists, G. Classical Hero, H. The Baroque. This course may be repeated for a maximum of 32 units.

260 • Studies in the Eighteenth Century (4) Sturm, Temmer

A. Voltaire, B. Diderot, C. Rousseau, D. Rousseau, E. The Novel, F. Political Thought in Belletristic Literature, G. Utopia in the *Siecle des Lumieres*. This course may be repeated for a maximum of 28 units.

*See N-2 for 198/199 independent studies unit limitations.

261 • Rousseau and His Critics (4) Temmer
A study of Rousseau's major works as point of departure in and analysis of the historical development of criticism on these works. Emphasis given to modern critical views.

262 • The Confessional Urge: Studies in French Autobiography (4) Sturm
A critical inquiry into motivation and strategies of the genre. Casanova, Rétif, Rousseau, Leiris, Adamov, Sartre, Barthes and others, in selected texts. Psychoanalytic orientation.

263 • Rousseau and the Alienation of Modern Man (4) Sturm
In condemning the enlightenment notion of progress, Rousseau became the first thinker to anticipate the dehumanized edifice of the modern era. Discussion on his views on politics, art, education and his extraordinary influence will be considered through Freud and Marcuse.

270 • Studies in the Nineteenth Century (4) Cushing, Delattre, Walker
Study in depth of selected texts of the nineteenth century with emphasis on A. Balzac, B. Stendhal, C. Flaubert, D. Zola, D—D. Zola, E. Romantic Poetry, F. Baudelaire, G. Symbolism, H. Literature of the Second Empire, I. Theater, J. Hugo. This course may be repeated for a maximum of 44 units.

280 • Studies in the Twentieth Century (4) Cushing, Greene, Murray
A. Proust, A—A. Proust, B. Gide, C. Apollinaire, D. Existentialism, E. Existentialism, F. Theatre, G. Essay, H. Surrealism, I. Valéry, J. Contemporary Criticism, K. Camus, L. Politics and Literature. May be repeated for a maximum of 52 units.

288 • Theory and Practice of the "nouveau roman" (4) Greene
Will be devoted to theory and practice of the "nouveau roman." Writers studied will include Robbe-Grillet, Butor, Sarraute, Duras, and Beckett.

289 • La Litterature Maudite (4) Greene
The question of "la litterature maudite" from Sade to the present examined. Nerval, Lautreamont, Baudelaire, Genet also studied.

400 • Introduction to Translation, French to English (4) Rainof
Prerequisite: B.A. and consent of instructor.
Translation of selected passages from French into English with emphasis on economic, political, and scientific texts. Course is open to all qualified graduate students.

401 • Introduction to Translation, English to French (4) Rainof
Prerequisite: Limited to students enrolled in the postgraduate translator-interpreter program in French.
Intended for students who are not native speakers of French. Translation of short passages from newspapers, magazines, and commercial correspondence.

410 • Introduction to Interpretation, French to English (4) Rainof
Prerequisite: French 400
Consecutive interpretation and précis writing, simultaneous interpretation without electronic equipment.

411 • Introduction to Interpretation, English to French (4) Rainof
Prerequisite: French 401.
Consecutive and simultaneous interpretation without electronic equipment.

420 • Advanced Translation, French to English (3-6) Rainof
Prerequisite: French 400, 410.
Individual translation project. Student translates 30-50 pages into English.

421 • Conference Interpreting (3-6) Rainof
Prerequisite: French 400, 410.
Interpretation of entire speeches into English, using tapes and equipment in the Language Laboratory.

596 • Directed Reading and Research (2-6) Staff
Individual tutorial. Instructor usually student's major professor. Students doing initial research on the doctoral dissertation may sign up for this course. Students must take a minimum of two units per quarter. No more than half the units necessary for the master's degree may be taken in 596. Letter grade given.

597 • Individual Study for Master's Comprehensive Examinations and Ph.D. Examinations (1-12) Staff
Instructor normally should be the student's major professor or chairman of his doctoral committee. S/U grade.

598 • Master's Thesis Research and Preparation (1-12) Staff
Only for research underlying thesis, writing thesis. Instructor should be chairman of student's thesis committee. S/U grade given. Since student is granted six units' credit toward the degree, no unit credit given.

599 • Dissertation Research and Preparation (1-12) Staff
Only for the writing of the doctoral dissertation. Instructor should be chairman of student's doctoral committee. Grade of S/U given.

Italian Lower Division courses

Students wishing to begin the study of Italian may now choose between Italian 1-6 and Italian 14 • **Individualized Instruction 1-6**. To help them decide which they may prefer, the main characteristics of each course are listed below:

Comparison of Italian 1-6 and 14

Italian 1-6

All students progress at the same rate of speed and cover the same amount of material.

At the end of the quarter all students who pass receive 4 units of credit.

Mastery of each instructional unit is encouraged but not required before the student proceeds to the next. As a result: the final grades for the quarter will be in the traditional range of A through F.

Class and laboratory attendance are required. The instructor is primarily responsible for directing student learning.

Tests are given to all students during regular classes at fixed times.

Italian 14

Each student progresses at his own rate of speed and covers differing amounts of material. At the end of the quarter each student receives the units of credit he has earned (from an expected minimum of 1 to a theoretical maximum of 24).

Mastery of each instructional unit is required before the student proceeds to the next. As a result: the final grade for the quarter will normally be A or B for all students.

Class (5 meetings per week) and laboratory attendance are not controlled but highly recommended.

The student is primarily responsible for directing his own learning (receiving suggested study procedures and individual guidance when needed). Also new vocabulary patterns are presented before the individual tackles them.

Test are given outside regular class hours to each student when he is ready.

To sum up Italian 1-6 is best for those students who prefer to stay with a group, with maximum guidance from an instructor, while Italian 14 is for those who wish to assume more responsibility for their own learning. Italian 14 is also for those who prefer to advance at a pace other than that imposed in Italian 1-6 or—to put it another way—who wish to earn either fewer or more than four units of credit per quarter (each student will wish to adjust the remaining course load according to the approximated number of units planned in Italian 14). Entrance into the Italian 14 Program is by sign-up in the Department office only. Please note: all levels of Italian 14 are not offered every quarter.

1 • Elementary Italian (4) Staff
Beginner's course

2 • Elementary Italian (4) Staff
(Continuation of 1.)

3 • Elementary Italian (4) Staff
(Continuation of 2.)

4 • Intermediate Italian (4) Staff [D]
(Continuation of 3.)

5 • Intermediate Italian (4) Staff [D]
(Continuation of 4.)

6 • Intermediate Italian (4) Staff [D]
(Continuation of 5.)

8A—B—C • Italian Conversation (2-2-2) Staff
Prerequisite: Italian 3 or consent of instructor.

11A—B • Italian for Graduate Students (4-4) Staff
A service course for graduate students from other departments who need to satisfy language requirements. Divided into two levels: 11A—elementary level—and 11B—intermediate level. Offers grammatical preparation and practice for translation.

14 • Individualized Instruction 1-6 (1-24) Staff [D- only for increments of 3 or more units each completed above level 12.]

A student will proceed at his own pace in completing each achievement level which is equivalent to one quarter of Italian. Students attend two group meetings and three consultations per week. Students must complete one level achievement unit before proceeding to the next level. Students earn four quarter units of credit for each level of achievement unit completed. May be repeated for a maximum of 24 units. All levels of Italian 14 are not offered every quarter.

Upper Division courses

Prerequisite to all Upper Division Italian courses, except where specially noted: Italian 6 or consent of the department.

101A—B—C • Conversation and Composition (3-3-3) Rossi [D]

Original composition, translation, discussion of selected passages from Italian literature.

106A—B • History and Culture of Italy (4-4) Bonadeo, Lawton [D]

A—History, art and culture from the Middle Ages to the end of the Renaissance.

B—Arts and society and their mutual impact on Italy from 1860 to the present.

106X • History and Culture of Italy in Translation (4) Lawton [D]

History, art and culture from 1100 to 1450. Lectures and readings in English.

106Y • History and Culture of Italy in Translation (4) Bonadeo [D]

History, art and culture from 1450 to the beginning of the 18th century. Lectures and readings in English.

106Z • History and Culture of Italy in Translation (4) Lawton [D]

Arts and society and their mutual impact on Italy from 1860 to the present. Lectures and readings in English.

110A—B • Dante: La Divina Commedia (4-4-4) Bonadeo [D]

Dante's *The Divine Comedy: Inferno, Purgatory, and Paradise* studied in their broad historical and moral contexts based on a close reading of the text. Lectures and readings in Italian.

110C • Petrarca e Boccaccio (4) Bonadeo [D]

Petrarca's *Rime* and Boccaccio's *Decameron* are analyzed to gain an understanding of the ethic and culture of the Middle Ages.

111 • Petrarch (4) Staff [D]

The course will cover the aesthetic and philosophical and autobiographical questions involved in Petrarca's *Rime Sparse* and *Secretum*, as well as defining Petrarchism and the contribution of Petrarch in Italian and European literature.

114X—Y—Z • Masterpieces of the Italian Middle Ages in Translation (4-4-4) Bonadeo [D]

A study of the spiritual, moral and material values in the world of the Italian Middle Ages through the works of Dante, Petrarch, and Boccaccio. Dante's *Divine Comedy* will be dealt with exclusively in Italian 114X—Y; Petrarch and Boccaccio will be dealt with in 114Z. Lectures and readings in English.

115A—B—C • Italian Literature of the Nineteenth Century (4-4-4) Bonadeo, Lawton [D]

Covers the various currents of Italian romanticism from the early romantics (Foscolo, Leopardi, Manzoni) to the poetry of the end of the century represented by poets such as Pascoli and D'Annunzio. Genres include fiction, poetry and autobiography. Lectures and readings in Italian.

116X • Machiavelli (4) Bonadeo [D]

A study of class conflicts, the uses of power, and the nature of war in the works and times of Machiavelli. Lectures and readings in English.

116Y • Love and Chivalry in the Italian Renaissance (4) Bonadeo [D]

A study of the practice and ideal of love and chivalry within the social context of the times of Ariosto and Castiglione. Lectures and readings in English.

116Z • Love and Society in the Italian Renaissance (4) Bonadeo [D]

A study of moral and social conflicts and aspirations in the poetry of Michelangelo and the epic of Tasso. Lectures and readings in English.

118 • Modern Italian Novel (4) Rossi [D]

Discussion of the major Italian novelists of the twentieth century such as Pirandello, Moravia, Tomasi, Vittorini, Pavese. The history of the novel in modern times also discussed. Lectures and readings in Italian.

118X • Modern Italian Novel in Translation (4) Staff [D]

Discussion of the major Italian novelists of the 20th century such as Pirandello, Moravia, Tomasi, Vittorini, Pavese. The history of the novel in modern times also discussed. Lectures and reading in English.

119 • Contemporary Italian Poetry (4) Rossi [D]

The course deals mainly with the works of Ungaretti, Montale, Quasimodo, but references will be made to Italian, French, and American poetry of the nineteenth century in order to trace the origin of modern Italian poetry. Lectures and readings in Italian.

139X—Y—Z • Survey of Literature in Translation (4-4-4) Lawton [D]

First quarter: Medieval and Renaissance Italian literature in translation. From Dante to Machiavelli.

Second quarter: Studies in 20th century Italian literature from the start of the century to the post-war period. Futurism. Pirandello, Moravia, Silone, Vittorini, Sciascia. Political writers and literary reformers.

Third quarter: Further study in 20th century Italian literature and political thought. Lectures and readings in English.

150X • Italian Novel Into Film (4) Lawton [C]

An analysis of major trends in the contemporary Italian novel and its thematic and stylistic impact on the work of major film directors. Special emphasis to be placed on Verga, Moravia, Silone, and Vittorini (the novel) and Visconti, Rossellini, and Lattuada (in film).

151X • Seminar on the Literature of the Italian South (4) Lawton [D]

A study, through literature, of the southern question and related cultural and social problems. Authors will include Verga, Lampedusa, Levi, Silone, Vittorini, and Danielo Dolci. Possibly literary material will be illustrated by, or related to, selected films that have recorded similar experiences. Readings and discussion in English.

180X—Y • World Cinema (4-4) Lawton (C)

Selected themes illustrate how directors of all countries and periods address themselves to the foremost issues of the age. Recent themes include: education, religion, labor, greed. X and Y may be repeated for up to four credits only.

180Z • World Cinema (4) Lawton (C)

Deals exclusively with Italian cinema.

181X • Post-War Italian Cinema: Major Currents (4) Lawton [C]

Main currents of post-war Italian cinema, from Neorealism onwards, with special emphasis on the films of Visconti and his legacy.

188X—Y • Introduction to Italian Cinema (4-4) Lawton [C]

Introduction to major trends in Italian cinema from the silent period to the Sixties. Lectures and readings in English.

*199 • Independent Studies in Italian (1-5) Staff

Individual investigations in literary fields. 199 courses are limited to no more than five units in one quarter, no more than 15 units per year, and no more than 30 units total.

Graduate Course

596 • Directed Reading and Research (1-6) Staff

French literature and film in English translation

(Courses for which no knowledge of French is required.)

An undergraduate major in French may enroll for credit in two quarters of any French literature or film courses in English translation.

25X • Seminar on French Literature in Translation (4) Staff [D]

Discussion of subjects of major interest pertaining to French literature and French culture in general—for example, surrealism, existentialism, the avantgarde, the French film, modern French drama, French sources of American culture. Subject will vary with instructor. *This course is open only to freshmen and sophomores.*

41FS • Freshman Seminar (3) Staff

Myth in medieval romance. Application of research in theories of myth and mythic narrative and Middle English verse romances. Open to freshmen only.

*See N2 for 198/199 independent studies unit limitations.

102X • Social Attitudes and Language (4) Ashby [D]

A new approach to language, stressing the development of major modern Western languages, as affected by social and cultural factors.

109X—Y—Z • Survey of French Literature In Translation (4-4-4) Staff [D]

Great masterpieces of French literature in translation (May not be taken for major, minor, or graduate credit.)

137X • Love in the Medieval French Narrative (4) Staff [D]

A study of seven medieval French guides to the art of love and of the thematic treatment of love in a variety of texts, including *Tristan et Iseut*, the lais of Marie de France, the romances of Chretien de Troyes, *The Romance of the Rose*, *Aucassin and Nicolette*, and the *fabliaux*.

138X • The Medieval French Drama (4) Staff [D]

A study of the origins of Medieval European drama and of the development, staging, and critical theory of French drama with readings of major dramatic works to 1500.

141X • Rabelais in Translation (4) Staff [D]

A study of the works of Rabelais in an attempt to discover in them the expression of a popular culture parallel to official literary culture but most often excluded from officially recognized literature.

151X • Emotion and Intellect in 17th Century French Culture (4) Staff [D]

An exploration of selected aspects of scientific, artistic, political, philosophical and religious life in 17th century France.

161X • The Utopian Tradition (4) Sturm [D]

Beginning with Utopian thought in the French Enlightenment (Diderot, Rousseau, Voltaire, and others), this course will analyze the aspirations of major writers like Saint-Simon, Fourier, Sartre, and Marcuse towards a socially perfect order and the problems arising therefrom.

162X • Contrasts in Wit and Satire: Candide and Rasselas (4) Temmer [D]

The course will focus on the stylistic and thematic structure of Voltaire's masterpiece as well as on his refutation of philosophical optimism. Samuel Johnson's *Rasselas* will be studied by way of contrast.

163X • Diderot, Fiction and Role-Playing (4) Temmer [D]

A study of Diderot's concern with human happiness (sexual freedom in *The Supplement to the Voyage of Bougainville*), with the theory and practice of the novel (*Jacques the Fatalist*), with acting on the stage (*Paradox on the Comedian*), with the alienated man (*Rameau's Nephew*).

164X • Rousseau and the Confessional Urge (4) Temmer [D]

An in-depth analysis of Rousseau's *Confessions*, one of the most influential documents of Western Civilization. Also to be studied: *The Fifth Reverie of the Solitary Wanderer*.

165X • The Myth of Don Juan in Literature and Music (4) Temmer [D]

The course traces the metamorphoses of the enigmatic figure of Don Juan from his first appearance in *The Trickster of Seville* by Tirso de Molina through the ages—Molière, Mozart, Byron, Shaw, Horvath, Frisch and Paul Goodman's psychoanalytical study.

170X • Nineteenth Century French Literature in Translation (4) Walker [D]

Readings, in translation, of selected nineteenth century French authors such as Hugo, Baudelaire, Mallarme, Verlaine, Rimbaud, Chateaubriand, Balzac, Stendhal, Flaubert, Zola

170Y—Z • The Nineteenth Century French Novel in Translation (4-4) Delattre, Walker [D]

Readings of works of 19th century French novelists. First quarter: Balzac, Stendhal, Hugo and other writers of the first half of the century. Second quarter: Flaubert, Zola and other writers of the second half of the century. Principal themes, techniques, varieties of creative activity, relationship with other arts and with society.

172X • Literature and the Rise of the Modern World (4) Walker [D]

A study of the role played by the creative artist in the process of cultural change: the impact of change on the artist; the opportunities that change gives the artist; the artist as world creator.

174X • Aspects of the French Novel (4) Delattre, Murray, Walker [D]

A course whose specialized focus changes from quarter to quarter but in which reading assignments will be limited to major works by major authors, mostly of the 19th and 20th centuries, e.g., Balzac, Stendhal, Flaubert, Zola, Proust, Gide, Camus.

176X • The Symbolist Heritage (4) Cushing, Walker [D]

A study of key poems and prose texts which throw light on aspects of 19th century symbolism.

177X • Literature and Religion in Modern France (4) Walker [D]

Religious French aspects of French fiction and poetry since the Revolution. Readings of selected authors such as Hugo, Balzac, Flaubert, Baudelaire, Huysmans, Claudel, Gide, and Mauriac.

178X—Y—Z • French Film: Theory and Practice (4-4-4) Greene [C]

A study of the various film movements in France (surrealism, new wave, cinema verite, political filmmaking of the 1960's) through the analyses of texts (especially Cocteau, Bazin, the Dziga Vertov group) and films (by Cocteau, Renoir, Godard).

179X • Decadence (4) Greene, Murray [D]

A study of the decadent phenomenon as seen in such writers as Lautreamont, Proust, Gide, Celine, Genet, selections to be based on available translations. The course will be of interest to students in art and music as well as in literature.

180X • Existentialist Literature in Translation (4) Murray [D]

Readings in fiction, drama, and philosophical essays from the French existentialist movement. Readings will include Jean-Paul Sartre, Albert Camus, Simone de Beauvoir.

180Y • Proust in Translation (4) Murray [D]

A close study of several volumes of Marcel Proust's "Remembrance of Things Past." The major Proustian themes will be considered, as well as the principal features of Proust's style.

182X—Y • The Twentieth Century French Novel in Translation (4-4) Cushing [D]

The evolution of contemporary French fiction. First quarter: the influence of Symbolism—Valery, Gide, Mauriac, and others. Second quarter: the growth of the new novel—Breton, Sartre, Robbe-Grillet, Beckett, and others.

183X • From Existential Phenomenology to Structuralism (4) Sturm [D]

Intellectual movements in post-war France. Critical readings and discussion in literature, psychoanalysis, art and systems. Sartre, Lévy-Strauss, Lacan, Barthes, Foucauld, and others.

184X • French Novel Into Film (4) Staff [C]

The different ways of transforming a novel into a feature film will be studied.

184Y • French Film Directors (4) Staff [C]

A study of selected works of two or three major French film directors such as Rene Clair, Robert Bresson, Jean Vigo, Alain Resnais, Claude Chabrol, Max Ophuls, Francois Truffaut, Jean Cocteau, Jean Renoir, and Eric Rohmer.

184Z • Key Works of the French Cinema (4) Staff [C]

A study of eight or so films (each by a different director), each of which is both important and artistically successful in itself and illustrative of a period or a tendency in the history of the French film.

185X • Contemporary French Theatre in Translation (4) Staff [D]

A study of the major French dramatists of the twentieth century, such as Sartre, Camus, Artaud, Beckett, Ionesco, Genet. Emphasis placed on contemporary plays.

186X • Beckett and Godard: The Difficulties of Creation (4) Greene [D]

An examination of the way these two artists, working in different fields, are questioning the nature of their art and entertaining the idea that further creation may no longer be possible

187X • French Cinema of the 1930's (4) Staff [C]

Themes and development of French cinema from 1930 to the outbreak of World War II.

187Y • French Cinema Since World War II (4) Staff [C]

Themes and cinematic innovations in post-war cinema of France.

187Z • Surrealist Film (4) Cushing, Greene [C]

A study of the surrealist film of the 1920's and

1930's Complementary surrealist texts read Course designed for upperclassmen and graduate students.

188X • Contemporary French Drama and Film in Translation (4) Greene [C]

An examination of contemporary currents in French theater and film. Concentrates on theater of the absurd—Beckett, Ionesco and Genet, as well as such filmmakers as Godard.

189Y—Z • Personal Documentary: From Vertov to Cinema Verite (4-4) Greene [C]

The concept of film documentary will be studied and films of various directors shown. Among the filmmakers included are Dziga Vertov, Jean Rouch, Chris Marker, Luis Bunuel.

Italian Literature and Film in English translation

(Courses for which no knowledge of Italian is required.)

106X—Y—Z • History and Culture of Italy in Translation (4-4-4) Bonadeo, Lawton [D]

First quarter: History, art and culture from 1100 to 1450.

Second quarter: History, art and culture from 1450 to the beginning of the 18th century.

Third quarter: Arts and society and their mutual impact on Italy from 1860 to the present.

114X—Y—Z • Masterpieces of the Italian Middle Ages in Translation (4-4-4) Bonadeo [D]

A study of the spiritual, moral and material values in the world of the Italian Middle Ages through the works of Dante, Petrarch, and Boccaccio. Dan-

te's *Divine Comedy* will be dealt with exclusively in Italian 114X—Y. Petrarch and Boccaccio will be dealt with in 114Z.

116X • Machiavelli (4) Bonadeo [D]

A study of class conflicts, the uses of power, and the nature of war in the works and times of Machiavelli

116Y • Love and Chivalry in the Italian Renaissance (4) Bonadeo [D]

A study of the practice and ideal of love and chivalry within the social context of the times of Ariosto and Castiglione.

116Z • Love and Society in the Italian Renaissance (4) Bonadeo [D]

A study of moral and social conflicts and aspirations in the poetry of Michelangelo and the epic of Tasso.

118X • Modern Italian Novel in Translation (4) Staff [D]

Discussions of the major Italian novelists of the 20th century such as Pirandello, Moravia, Tomasi, Vittorini, Pavese. The history of the novel in modern times also discussed.

139X—Y—Z • Survey of Literature in Translation (4-4-4) Lawton [D]

First quarter: Medieval and Renaissance Italian literature in translation. From Dante to Machiavelli.

Second quarter: Studies in 20th century Italian literature from the start of the century to the post-war period. Futurism. Pirandello, Moravia, Silone, Vittorini, Sciascia. Political writers and literary reformers.

Third quarter: Further study in 20th century Italian literature and political thought

150X • Italian Novel Into Film (4) Lawton [C]

An analysis of major trends in the contemporary Italian novel and its thematic and stylistic impact on the work of major film directors. Special emphasis to be placed on Verga, Moravia, Silone, and Vittorini (the novel) and Visconti, Rossellini, and Lattuada (in film).

151X • Seminar on the Literature of the Italian South (4) Lawton [D]

A study, through literature, of the southern question and related cultural and social problems. Authors will include Verga, Lampedusa, Levi, Silone, Vittorini, and Danielo Dolci. Possibly literary material will be illustrated by, or related to, selected films that have recorded similar experiences.

180X—Y • World Cinema (4) Lawton [C]

Selected themes illustrate how directors of all countries and periods address themselves to the foremost issues of the age. Recent themes include: education, religion, labor, greed. X and Y may be repeated for up to four credits only.

180Z • World Cinema (4) Lawton [C]

Deals exclusively with Italian cinema.

181X • Post-War Italian Cinema: Major Currents (4) Lawton [C]

Main currents of post-war Italian cinema, from Neorealism onwards, with special emphasis on the films of Visconti and his legacy.

188X—Y • Introduction to Italian Cinema (4-4) Lawton [C]

Introduction to major trends in Italian cinema from the silent period to the Sixties. 640.

Geography

Professors

John E. Estes, Ph.D., *UC Los Angeles; remote sensing, Soviet Union, regional resource analysis, arid lands.*

Reginald G. Golledge, Ph.D., *University of Iowa, urban geography, behavioral geography, learning theory, subjective distance, spatial modeling.*

David S. Simonett, Ph.D., *University of Sydney, Australia; remote sensing, soil geography, land use planning (Chairperson).*

Waldo R. Tobler, Ph.D., *University of Washington, cartography, location theory, dynamics of geographical change, geometry of spatial relations, machine processing of geographical data.*

Associate Professors

Terence R. Smith, Ph.D., *The Johns Hopkins University; economic and urban geography, economic environmental problems.*

Jeffrey C. Dozier, Ph.D., *University of Michigan; hydrology, physiography, quantitative methods, computer applications.*

Assistant Professors

Alan H. Strahler, Ph.D., *The Johns Hopkins University; biogeography, quantitative methods, environmental issues in geography.*

Research Geographer

Nuttonson, Michael Y., Ph.D., *Academy of Agricultural Science, USSR, 1937. Plant physiology, subtropical horticulture, and crop ecology*

Concerns of the department

The Geography major is designed to provide a fundamental background for students seeking an interdisciplinary understanding of the world; to offer training for a career in business and government as well as teaching in geography and the social sciences; to prepare students for graduate studies in theoretical and applied work in geography; and to prepare students to conduct original research.

The program is organized around systematic, technique, and regional courses. Students will normally acquire familiarity with elements of both systematic analysis and techniques. Students interested in becoming professional geographers are encouraged to develop a heavy additional concentration in one or more related disciplines. Specific individual programs will be worked out in consultation with advisers.

Departmental Advising

Undergraduates may consult one or more of three advisers - a faculty undergraduate adviser, a peer counselor, and/

or the Chairperson. Peer counselors are majors in Geography (graduate and undergraduate) who have a high G.P.A. and who have been trained in the requirements of the major. Each Fall quarter undergraduates are expected to meet with their advisers: (a) in a general meeting; and (b) individually to discuss their programs and progress toward the degree. Advisers are available for consultation throughout the year. All Geography undergraduate and graduate majors are provided mailboxes in order to receive advance communications about new courses, projected scheduling of classes, change in requirements, etc. A faculty member acts as graduate adviser to M.A. and Ph.D. candidates and he is available for consultation, by appointment, throughout the year. Prospective or new undergraduate and graduate students should schedule an appointment with their respective advisers upon arrival on campus.

Bachelor of Arts

Preparation for the major:

Required:

3 • Elements of Physical Geography
5 • Socio-Economic Geography: An Introductory Survey.
Biology 11A or 20Z or Botany 20 or Environmental Studies 13 or Geology 2 and 2L.

Strongly Recommended: Geology 117 and a minimum of one course in statistics.

Upper Division major:

Required: 36 upper division units in Geography including:

101 • Spatial Analysis
101L • Spatial Analysis Lab

8 units from systematic courses (e.g.):

102 • Energy and Mass Transfer
106 • Urban Geography
109 • Issues in Planning
110 • Introduction to Meteorology
111 • Climatology
112 • Hydrology
113 • Physiography
114 • Geography of Soils
119 • Climatic Change and its Consequences
121 • Real Estate & Housing Markets: a Geographical Perspective
126 • History of Cartography
130 • Forest Watershed Management
131 • Water Quality and Land Use
132 • Environmental Impacts of Recreation
133 • Desert Geomorphology
134 • Coastal Geomorphology
140 • The Changing World
144 • Movement Systems: Theory and Problems
145 • Migration
153 • Introduction to Human Spatial Behavior

- 161 • Man in Nature
- 162 • Environmental Pollution
- 163 • The Ocean as a Physical System
- 165 • Biogeography
- 167 • Foundations of Biogeography
- 168 • Surface Climate and Water Relations of Soils and Vegetation
- 181 • Ecological Crop Geography
- 182 • Principles of Landuse/Landcover Analysis
- 183 • Uncertainty and Spatial Decision Processes
- 190 • Location Theory in Geography
- 195 • Selected Problems in Geography
- 198 • Readings in Geography
- * 199 • Independent Studies

8 units from technique courses (e.g.):

- 115A • Geographic Photo Interpretation
- 115B • Geographic Remote Sensing Techniques
- 115C • Intermediate Geographic Remote Sensing Techniques
- 117 • Geographic Field Techniques
- 118A • Introductory Cartography
- 118B • Intermediate Cartography
- 118C • Production Cartography
- 122A • Field Snow Hydrology
- 122B • Field Snow Hydrology
- 125 • Introductory Computer Cartography
- 127 • Cartographic Transformations
- 128 • Analytical Cartography
- 135 • Thermal Infrared Remote Sensing
- 164 • Navigation
- 172 • Techniques of Geographic Data Analysis I
- 172L • Laboratory in Geographic Data Analysis I
- 173 • Techniques for Geographic Data Analysis II
- 173L • Laboratory in Geographic Data Analysis II
- 193 • Internship in Geography

4 units from regional courses (e.g.):

- 141 • Geography of Arid Lands
- 148 • California
- 150 • North America
- 152 • Africa: South of the Sahara
- 154 • Geography of Australia and New Zealand
- 155 • Geography of the Soviet Union
- 159 • Geography of Europe

A maximum of eight upper division units may be included for Geography credit from approved courses in closely related fields. Students who plan to obtain teaching credentials should not utilize this option.

*See N2 for 198/199 independent studies unit limitations

Graduate Programs

Master of Arts

Admission Requirements

In addition to fulfilling the general requirements for admission to graduate status, the department requires an undergraduate major in Geography or its equivalent with a high scholastic average. Applicants without an undergraduate degree in Geography, or with some other deficiency may be admitted with the provision that additional work be

taken during progress to the M.A. degree. Satisfactory performance in both the Verbal and Quantitative sections of the Graduate Record Examination is also required and recent records from the G.R.E. should be submitted. The G.R.E. is required for all applicants except those from UCSB who have obtained the B.A. in Geography within four quarters of their projected first term of enrollment in the M.A. Program. Some undergraduate preparation in mathematics, statistics and computer programming is encouraged.

Degree Requirements

Two plans are available for obtaining an M.A. Plan I requires a thesis. Plan II requires an examination.

In Plan I, 30 units are required, at least 20 units in Geography, plus a thesis suitable in form and format for publication.

In Plan II, 36 units are required, at least 24 units in Geography, plus a final examination assessing both the candidate's general knowledge of Geography and his chosen specialty.

Geography Ph.D.

Admission Requirements

In addition, to fulfilling the general requirements for admission to graduate status, the Department requires an undergraduate program which is substantially equivalent to the Department's undergraduate major. Applications from outstanding students in other majors will be encouraged, but such students should expect to take additional courses in their first year of graduate study to meet this requirement. A high undergraduate grade-point performance in the Verbal and Quantitative sections of the GRE is required for all applicants. For most students a Master's degree or equivalent will be required for admission to the Doctoral program. In unusual circumstances highly qualified candidates may be directly admitted without a prior Master's degree.

Degree Requirements

The Ph.D. program is designed around four systematic specialties; two each in Physical and Human Geography. These are respectively:

Physical Geography

- Water Resource Geography
- Vegetation Resource Geography

Human Geography

- Geographical Movement Systems
- Geographical Behavior Systems

One systematic specialty will be chosen for major emphasis, another for minor emphasis. In addition advanced training in Geographical Data Processing and Analysis will be taken by all students to strengthen their systematic work. Major areas of concentration in these supporting skills include mathematical and quantitative analysis, computer cartography and geographical information systems, and remote sensing. No foreign language will be required.

All graduate students will be required to take a diagnostic examination to ensure that they are qualified to under-

take graduate-level work in the chosen fields of emphasis. Deficient performance on portions of this exam may be made up by course work specified by the graduate advisor. Prior to the student's oral qualifying examination, he/she shall complete a dissertation proposal, which describes the dissertation topic, summarizes the relevant background literature, and presents the research plan, including a timetable and budget. The doctoral committee must approve the dissertation. Upon satisfactory completion of the oral examination, the student will be advanced to candidacy and dissertation research undertaken. The results of the student's research shall be presented as a dissertation in accordance with regulations of the Graduate Division. The final examination shall consist of a public dissertation lecture, followed by questions from the committee and the audience.

Deadlines to remember

Applications for fellowships: prior to January 15. Applications for Teaching and Research Assistantships: February 15; other applications: March 1.

Career Opportunities

This major is designed to provide undergraduate preparation leading to careers in: 1) government, both local and state offices, in urban and regional planning agencies, in

agencies of the Federal Governments, including HUD, E.P.A., DOD, DOT, Interior, etc., the Foreign Service and in International organizations; 2) business and consultants to business; 3) College and University teaching and research with three to six additional years in a graduate program completing programs leading to an M.A. and Ph.D.; 4) primary and secondary level teaching with one additional year of education required in some areas; and, 5) specialized areas such as Remote Sensing and Aerial Photography, Resource Evaluation, Urban and Regional Planning, Industrial Location, Marketing Resource, Transportation and Cartography.

Teaching Credentials

Students who complete a major in geography may be eligible for pursuing a California teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180 Phelps Hall.

Correspondence Information

Department of Geography, Ellison Hall, Rm. 3611, University of California, Santa Barbara, California 93106. Phone: (805) 961-3663.

Geography

Lower Division courses

2 • Introduction to Human Geography (4) Staff [E1]

Lecture, three hours. Discussion, one hour.

An introduction to the geography of man stressing concepts basic to understanding the variety of man-land relationships arising from the interaction of culture and the physical environment.

3 • Elements of Physical Geography (4) Dozier, Strahler [B2]

Lecture, three hours. Discussion, one hour.

Survey of man's physical environment. Distribution and interrelationships of atmospheric phenomena, climate, soils, plant and animal communities and landforms.

5 • Socio-Economic Geography: An Introductory Survey (4) Clayton, Smith [E1]

Lecture, three hours. Discussion, one hour.

Survey of distribution, evaluation, and use of the earth's resources. Specific emphasis on the population composition, urbanization and inequalities in economic well-being within the framework of geographic change, environmental modification and planning

Upper Division courses

101 • Spatial Analysis (4) Clayton [E1]

Prerequisites: Geography 3, 5 or consent of instructor. Must be taken concurrently with Geography 101L. Lecture, three hours. Required of all majors.

Introduction to the science of Geography and geographic research, including a review of core

concepts, theories, and methodologies important for spatial analysis.

101L • Spatial Analysis Laboratory (1) Clayton

Prerequisites: Geography 3, 5 or consent of instructor. Must be taken concurrently with geography 101. Laboratory, three hours.

Spatial concepts and measurement techniques as analyzed through exercises and analog modeling

102 • Energy and Mass Transfer in Physical Geography and Remote Sensing (4) Dozier [B2]

Prerequisites: Geography 3 and high school algebra and trigonometry. Math 34A and 34B are recommended.

Lecture, three hours. Discussion, one hour.

Basic physical principles of transfer processes in physical geography and remote sensing. Topics include electromagnetic radiation, diffusion processes (soil heat flow, convection, evaporation), computation and measurement. Examples of practical applications include thermal mapping, snowmelt models, soil moisture and microwave radiation, and radiation ecology

106 • Urban Geography (4) Clayton, Golledge [E1]

Lecture, three hours.

The study of the social, economic, and physical nature of urban settlements. Analysis of the system of cities in the United States and its temporal evolution. Also the study of the internal structure and socio-economic processes operating within the city.

109 • Location and Environmental Issues in Planning (4) Staff [E1]

Prerequisites: Geography 3.

Lecture, three hours. Laboratory, one hour.

Location/allocation and environmental issues in planning by governments and the private sector. Conflicts over location. Location/allocation models, and environmental issues in locating pipelines, powerlines, highways, dams, retail outlets and similar ventures.

110 • Introduction to Meteorology (4) Smith [B2]

Prerequisite: Geography 3 or equivalent. Basic physics recommended. Lecture, three hours.

An introduction to the dynamics of the earth's atmosphere. Energy exchange mechanisms, energy balance, condensation and precipitation processes, the dynamics of pressure and wind systems, and the distributions of weather disturbances. Discussions of instrumentation, mapping of synoptic patterns, local weather systems, and methods and consequences of weather modification experiments.

111 • Energy Balance Climatology (4) Dozier [B2]

Prerequisite: Geography 3 or consent of instructor.

Lecture, three hours.

Processes of energy exchange between the atmosphere and the earth's surface. Topics include solar and atmospheric radiation, soil heat and water flow, turbulent transfer and wind relationships, evaporation, and applications.

112 • Hydrology (4) Dozier [B2]

Prerequisite: Geography 3 or consent of instructor.

Lecture, three hours

Nature of water cycle with emphasis on relationships among meteorological, surface water,

and ground water phenomena. Problems of contamination, human responses to floods and river regimes.

113 • Physiography (4) Simonett, Dozier [B2]

Prerequisite: Geography 3. Lecture, three hours. Dynamics of the development of landforms with emphasis on the problems of human utilization of the earth's surface.

114 • Geography of Soils (4) Simonett [B2]

Prerequisites: Geography 3, or Geology 2 or consent of instructor. Introductory Botany and Geology recommended. Lecture, three hours.

Soils and pedogenic processes. Soil classification and characteristics. Soil properties of importance to agriculture, earth science, and engineering.

115A • Geographic Photo Interpretation (4) Estes

Prerequisite: Geography 3 or consent of instructor. Introductory Botany and Geology recommended. Lecture two hours. Laboratory, four hours.

Interpretation of physical and cultural geographic phenomena as recorded by orbital and aerial sensing systems with emphasis on conventional aerial photography.

115B • Geographic Remote Sensing Techniques (4) Estes, Simonett

Prerequisites: Geography 115A or equivalent, and consent of instructor. Lecture, two hours. Laboratory, four hours.

Human and computer interpretation of environmental phenomena recorded by orbital and aerial multispectral sensing systems. Emphasis is on the nature of the data recorded and the extraction of useful decision information. Contemporary LANDSAT data is used. Lab uses an interactive image analysis program.

115C • Intermediate Geographic Remote Sensing Techniques (4) Estes, Simonett

Prerequisites: Geography 115B or consent of instructor. Lecture, 2 hours. Lab, 3 hours.

Intermediate instruction in the interpretation of environmental phenomena recorded by aerial and satellite platforms with emphasis upon microwave and infrared regions.

117 • Geographic Field Techniques (4) Staff [E1]

Prerequisites: Geography 3 and consent of instructor. Lecture, one hour. Laboratory, six hours.

Introduction of the basic methods of geographic survey and analysis.

118A • Introductory Cartography (4) Staff

Prerequisites: Geography 3 and/or consent of instructor. Lecture, two hours. Laboratory, four hours

Types of maps and map projections; Basic map compilation; Design; and Construction

118B • Intermediate Cartography (4) Staff

Prerequisites: Geography 3, 118A and/or consent of instructor Lecture, two hours. Laboratory, four hours

Landform representation: Basic contour compilation bloc-diagraming, shading technique, and experimental forms of 3-dimensional surfaces.

118C • Production Cartography (4) Staff

Prerequisites: Geography 118A or consent of instructor. Lecture, two hours. Laboratory, four hours.

Advanced work with map production including: photo-printing processes, separations, color methods, proofing, plate-making and printing.

119 • Climatic Change and Its Consequences (4) Simonett [B2]

Prerequisites: Geography 3 or consent of instructor.

Theories and dynamics of climatic change. Emphasis on the problems of human utilization of different climatic zones under various degrees of uncertainty.

122A • Snow Hydrology (4) Dozier

Prerequisites: Geography 102 or 112, or Environmental Studies 12 and 14. Geography 110 and 115B are recommended. Lecture, three hours.

Nature of snow, snow metamorphism, snow surface energy exchange, snowmelt runoff, and avalanche hazards. Analysis through field measurements, remote sensing, and computer simulation. One two-day field trip.

122B • Field Snow Hydrology (2) Dozier

Prerequisites: Geography 122A, plus ski-mountaineering ability and consent of instructor. Seminar, one hour. Laboratory, three hours.

Field analysis of snow, snow surface energy exchange, and snowmelt runoff. One five-day field trip required.

125 • Introductory Computer Cartography (4) Tobler

Prerequisites: EECS 5 or EECS 3A or CPSCI 10 (may be concurrent) or equivalent. Lecture, 2 hours. Laboratory, 4 hours.

An introduction to the digital coding, storage, retrieval, manipulation, parsing, and graphical display of geographical data, especially categorical, scalar, and vectorial fields. Algorithms and equipment useful for digitization and interactive cartography, involving movies and colored displays. Rudiments of cellular and polygon processing.

126 • History of Cartography (4) Tobler

Lecture, 3 hours. Prehistoric maps, protolani and medieval maps; the growth of geodesy, printing and technology; exploration of the earth and near planets; topographic surveys and photogrammetry; LANDSAT; relation of contemporary thematic cartography to statistics and graphic science.

127 • Cartographic Transformations (4) Tobler

Prerequisites: Math 9 or Math 34B or Math 5B or consent of instructor. Lecture, 3 hours.

Classical map projections; cartograms; empirical "rubber sheeting"; bi-dimensional regression. The geometry of geography: geodesics; geographical circles; the distortion tensor; non-symmetric distances.

128 • Analytical Cartography (4) Tobler

Prerequisites: Math 9, or Math 34B, or Math 3B; Geography 125 recommended. Lecture, 3 hours.

An introduction to the adjustment, filtering, interpolation, forecasting, and comparison of numerical and categorical geographical observa-

tions by collocation methods. Special attention is given to the treatment of alternate codings and aggregations of geographical data.

130 • Forest Watershed Management (4) Staff

Prerequisites: Geography 3 or consent of instructor. Lecture, three hours.

Examines impacts of silvicultural activities on hydrologic processes, water quality, soil fertility, erosion and mass movements. Discussion of forest management practices employed to minimize negative impacts on streams.

131 • Water Quality and Land Use (4) Staff

Prerequisites: Geography 3 or consent of instructor; Env. Studies 12 recommended. Lecture, three hours.

Land use activities as nonpoint sources of water pollution. Emphasis on types and quantities of pollutants associated with various agricultural, silvicultural, mining, construction and urban activities. Strategies to monitor and control NPS pollution will be discussed.

132 • Environmental Impacts of Recreation (4) Staff [E1]

Prerequisites: Geography 3 or consent of instructor; History 173T recommended. Lecture, 3 hours.

Examines environmental impacts associated with recreation in wilderness and other roadless areas. Student papers/group presentations required.

133 • Desert Geomorphology (4) Staff [B2]

Prerequisites: Geography 3 or consent of instructor. Lecture, three hours.

Landform development in deserts: origin of deserts, morphology, groundwater, Eolian processes, erosion and sedimentation in dry climates.

134 • Coastal Geomorphology (4) Staff [B2]

Prerequisites: Geography 3 or consent of instructor. Lecture, three hours.

Development of beach and coastal landforms, near-shore oceanographic processes, sea-level fluctuation, coastal morphology and problems of classification.

135 • Thermal Infrared Remote Sensing (4) Staff

Prerequisites: Geography 115B or consent of instructor. Lecture, three hours.

Theory and applications of thermal infrared remote sensing. Contact and remote measurements of energy exchanges at the earth's surface. Analysis of thermal imagery and application to microclimate, soils, and energy conservation.

140 • The Changing World (4) Tobler [E1]

Prerequisites: Upper division standing (84 or more units completed). Lecture, 3 hours.

Geographical dynamics, including models and evidence for the spread of ideas, of people, of wealth, or pollution; transportation systems and geographic change. Global forecasting models.

141 • Geography of the Arid Lands (4) Staff [E1]

Prerequisites: Geography 2 and 3 recommended. Lecture, three hours.

Comparative study of the arid-lands habitat. Physical and cultural complexes of the world's arid regions including climate, landforms, water, soils, vegetation, population and resources.

144 • Movement Systems: Theory and Problems (4) Smith [E1]

Prerequisites: Geography 5 or Economics 1 or 109 or consent of instructor.

Lecture, 3 hours.

Inter- and intra-urban movement of people, especially in the U.S.A. Description of empirically observed movement streams over time, and reasons given for moves. Theories of migration; determinants of decisions to migrate; prediction of migration; policy implication of models.

145 • Migration (4) Smith, Tobler [E1]

Prerequisites: Geography 3 or Geography 5.

Lecture, Three hours.

A study of population movements, including a survey of past, present and future patterns of the movement of people at an international, national and local scale. Problems arising from migration will be emphasized, including forced and illegal consequences for different areas.

148 • California (4) Staff [E1]

Lecture three hours.

The unique landscapes of California and the physical, cultural, and biotic processes which have produced them.

150 • North America (4) Staff [E1]

Lecture, three hours.

Intensive study of the physical and cultural processes that have shaped and are shaping the landscapes of North America.

152 • Africa: South of the Sahara (4) Staff [E1]

Lecture, three hours.

A survey of the interrelationships of the physical and cultural environments with their resource bases and inter-actions. Particular emphasis will be an analysis of major present-day problems and prospects for their resolution.

153 • Introduction to Human Spatial Behavior (4) Golledge [E1]

Prerequisites: Geography 3 or 5 or Economics 1 or 109 or consent of instructor.

Lecture, 3 hours.

Concentrates on process approaches to the analysis of human behavior within various spatial systems. Includes environmental cognition, location decision processes, and spatial behavior in a welfare context.

154 • Geography of Australia and New Zealand (4) Simonett [E1]

Lecture, three hours.

Characteristics and problems of Australia and New Zealand. Discussions of physical, economic, cultural and regional problems and potentials.

155 • Geography of the Soviet Union (4) Estes [E1]

Lecture, three hours.

A systematic approach to the study of the physical and cultural phenomena which characterize the Soviet Union.

159 • Geography of Europe (4) Clayton [E1]

Lecture, three hours.

A systematic approach to the study of the human and physical resources of Europe. Special emphasis placed on the spatial aspects of urban, economic, and social processes.

161 • The Human Species: Problems of Survival (4) Strahler [E1]

Prerequisite: Geography 3.

Lecture, three hours.

The human species in the natural environment. The growth and distribution of the human population in the ecological context as limited by food and agricultural outputs and by energy and mineral resources.

162 • Environmental Pollution (4) Strahler [E1]

Lecture, three hours.

Human contamination of the environment. Includes discussion of the air, water, land and space pollution and methods of pollution control.

163 • The Ocean as a Physical System (4) Staff [B2]

Prerequisites: Mathematics 3B or 34B or equivalent; may be taken concurrently. Lecture, 3 hours.

The water masses and circulation of the world ocean will be examined. The significant physical processes will be investigated and equations of motion developed. Theory of waves, tides, heat budget and functional dynamics of estuaries will be introduced.

164 • Navigation (4) Staff [B2]

Prerequisite: Geography 3.

Lecture, three hours. Laboratory, two hours.

Principles and practice of marine, land and air navigation. Primary emphasis on marine and celestial navigation and piloting. Secondary emphasis on radio and satellite navigation, selected problems peculiar to land and air navigation, and other techniques.

165 • Biogeography (4) Strahler [B2]

Prerequisites: Geography 3 and four hours from the Biological Sciences. Lecture, three hours.

Basic processes governing geographic distribution patterns of biota, including migration, evolution, isolation, and endemism. Biogeographic regions and their histories.

167 • Foundations of Biogeography (4) Strahler [B2]

Prerequisites: Geography 165 or Botany 103A—B or 140 or 146 or Zoology 140. Lecture, three hours for six weeks. Seminar, one hour for four weeks.

The development of ideas and approaches to biogeography in a historical context. Emphasis on plants and plant geography. Seminar includes presentation of classic papers as well as current research work. Research paper required

168 • Surface Climate and Water Relations of Soils and Vegetation (4) Staff [B2]

Prerequisites: Geography 111 or 112 or 114 (preferably at least two of the three). Plus Math 3B or 34B or equivalent. Plus a course in computer programming.

Lecture, 3 hours.

Analysis of the transfer of water and water vapor between soils and vegetation and the lower atmosphere. Topics include evaporation and

evapotranspiration, water movement in soils and plants, and aerodynamic characteristics of the atmospheric boundary layer.

172 • Techniques of Geographic Data Analysis I (3) Dozier, Strahler, Smith

Prerequisites: PSTAT 33, or equivalent with permission of instructor. Geography 172 must be taken concurrently with Geography 172L.

Lecture, 3 hours.

Introductory quantitative and statistical techniques as applied to geography. Applications of correlation and regression; point patterns and distance. Geography 172L required.

172L • Laboratory in Geographic Data Analysis I (2) Dozier, Strahler, Smith

Prerequisites: Must be taken concurrently with Geography 172.

Lecture, 2 hours. Laboratory, 4 hours.

Calculation and computation methods as appropriate to Geography 172. Introductory skills in computer programming and data manipulation using geographic data.

173 • Techniques for Geographic Data Analysis II (3) Smith, Strahler

Prerequisites: Geography 172, Math 9 or equivalent. Geography 173 must be taken concurrently with Geography 173L.

Lecture, 3 hours.

Intermediate quantitative techniques as applied to geography. Flow networks, trend surface analysis; Markov processes; clustering algorithms; multivariate methods. Geography 173L required.

173L • Laboratory In Geographic Data Analysis II (2) Smith, Strahler

Prerequisites: Must be taken concurrently with Geography 173.

Lecture, 2 hours. Laboratory, 3 hours.

Calculation and computation methods as appropriate to Geography 173. Intermediate skills in computer programming; use of various standard computation programs.

181 • Ecological Crop Geography (4) Simonett [E1]

Prerequisites: Geography 3 or consent of instructor. Geography 114 or Botany 123 recommended.

Lecture, 3 hours.

An analysis of the ecological and edaphic relation of major crops. Crop efficiencies and demands for energy and water. Yields in relation to environmental parameters. Regionalization of agricultural production and yields.

182 • Principles of Landuse/Landcover Analysis (4) Estes [E1]

Prerequisites: Geography 3 and/or consent of instructor.

Lecture, 3 hours.

An examination of the functional, spatial, temporal, and socio-economic parameters associated with the distribution of phenomena present in the landscape; emphasis upon the analysis of vegetation.

183 • Uncertainty and Spatial Decision Processes (4) Smith [E1]

Prerequisites: Geography 5 or Economics 1 or 109.

Lecture, 3 hours.

This course will concentrate on spatial decision making in the face of uncertainty, with refer-

ences to consumer behavior, migration decisions and geographical location decisions. Particular emphasis will be placed on information acquisition and mean-variance models.

190 • Location Theory in Geography (4) Staff [E1]

Prerequisites: Geography 101 and 101L or Economics 1 or 109, or consent of instructor. Lecture, 3 hours.

An in-depth analysis of the processes underlying the spatial distribution of human economic activity through the use of models. Attention to agricultural, industrial, and settlement patterns.

193 • Internship in Geography (1-12)

Prerequisites: Upper Division status, 3.00 overall G.P.A., approval by Department.

Practical experience and research on geographical problems under faculty direction as interns with local, state, and federal agencies, with private research and development firms, and with other business organizations. Periodic and final reports required. Only 4 units may count toward the major. Offered P/NP only.

195 • Selected Problems in Geography (2-4) Staff

Prerequisites: Consent of Instructor. Upper Division standing in Geography.

Investigation of selected geographic factors of major significance to human environmental interactions. (Scope and emphasis variable each time offered. May be repeated once for credit.)

*198 • Readings in Geography (1-2) Staff

Prerequisites: Upper Division standing (84 or more units completed) and consent of instructor. The proposal for the study must be submitted to, and approved by, the Department Chairman. Forms may be obtained in the Department Office.

Designed to provide in-depth directed inquiry into a topic of interest to the student. Maximum of four units may be accumulated.

*199 • Independent Studies (1-5) Staff

Prerequisites: Upper Division standing (84 or more units completed) with a 3.0 grade point average within the major. The Proposal for the study must be submitted to, and approved by, the department chairman. Forms may be obtained in the Department Office.

Selected research under the direction of a faculty member. 199 courses are limited to no more than five units in one quarter and no more than 12 units total.

Graduate courses

200A—B • Introduction to Geographic Research (2-4) Simonett, Strahler

Prerequisites: Required of all graduate students. Normally taken in winter and spring quarters, respectively.

Seminar, two hours.

Formulation and definition of research problems and approaches. Introduction to techniques of geographic research, including library, laboratory, and computer facilities.

203 • Seminar in Physical Geography (4) Dozier, Strahler

Prerequisites: An upper division course in physical geography and consent of instructor.

Seminar, 3 hours.

Survey of current literature and concepts in physical geography.

212 • Surface-Water Hydrology (4) Dozier

Prerequisites: Geography 112 or 113 or consent of instructor.

Recitation, 3 hours.

Analysis of the magnitude and frequency of surface water flows, stream hydraulics, flood-forecasting and the role of surface water in shaping the landscape.

214 • Microwave Remote Sensing (4) Estes, Simonett

Prerequisites: Geography 115C or consent of instructor.

Seminar, 3 hours.

Examination of active and passive microwave sensing. Ground spectrometer, aircraft systems, space systems. Radiometry, scattering theory, practical applications and problems.

215 • Seminar in Remote Sensing (2-4) Estes, Simonett

Prerequisites: Geography 115B or consent of instructor. It is recommended that Geography 214 precede Geography 215.

Advanced concepts in multispectral, multitemporal, manual, automated and hybrid remote sensing techniques. May be repeated more than once with changes in content, methods and applications areas examined.

216 • Remote Sensing Instrumentation and Software (4) Simonett

Prerequisites: Geography 115B, 125 and 173/173L or consent of instructor.

Seminar, 3 hours.

Radiometric and geometric characteristics of remote sensing instruments including digital and analog output devices. Software systems, and algorithms for multiband and multirate image analysis.

220 • Seminar in Regional Analysis (4) Tobler

Prerequisites: Geography 173 & 173L or equivalent; consent of instructor.

Study of current research in regional analysis. The topic will differ each year and will be announced in advance.

221 • Seminar in Transportation Geography (4) Clayton

Prerequisites: Geography 173 & 173L or consent of instructor.

Mathematical and statistical models of transport system structure, performance, and use.

222 • Spatial Decision Making (4) Smith

Prerequisites: Geography 153 or 183; consent of instructor.

Seminar, 3 hours.

Study of current theories and empirical evidence concerning decision making in a spatial context by individuals, firms and government agencies.

224 • Spatial Statistics (4) Smith, Tobler

Prerequisite: Geography 173 & 173L or equivalent; consent of instructor. — 1 Seminar, 3 hours.

Study of techniques for the analysis of spatial data. Spectral and non-spectral methods.

225 • Urban Problems (4) Clayton, Golledge

Prerequisites: Geography 106 and 173 & 173L or equivalent; consent of instructor.

Recitation, 2 hours. Seminar, 1 hour.

Detailed studies of selected social, economic and physical problems related to modern cities.

226 • Consumer Spatial Behavior (4) Golledge, Smith

Prerequisites: Geography 153 and 173 & 173L or equivalent; consent of instructor.

Seminar, 3 hours.

Theories and models of the spatial aspects of both rural and urban consumer behaviors; market spatial choice models.

227 • Scientific Reasoning in Geography (4) Golledge

Prerequisite: Graduate standing; consent of instructor.

Seminar, 3 hours.

Discussion of the application of reasoning principles from various philosophies of science and social science to relevant problems in geography.

228 • Multidimensional Analysis of Spatial Problems (4) Golledge, Tobler

Prerequisites: Geography 173 & 173L or equivalent; consent of instructor.

Seminar, 3 hours.

Principles of multidimensional unfolding and scaling; applications and use of scaling algorithms to spatial problems; clustering; problems of large data sets; other multidimensional techniques.

229 • Environmental Perception and Cognition (4) Clayton, Golledge

Prerequisites: Graduate standing; consent of instructor.

Recitation, 2 hours. Seminar, 1 hour.

Theories and methods related to acquiring, representing and analyzing knowledge of complex large scale environments.

230 • Behavioral Geography (4) Clayton, Golledge

Prerequisites: Geography 153 or equivalent; consent of instructor.

Seminar, 3 hours.

Survey of behavioral approaches in a variety of areas of geography.

231 • Seminar in Communication (4) Clayton

Prerequisites: Geography 101 & 101L, 173 & 173L or consent of instructor.

Study of the effects of communication technology on spatial behavior and structure.

235 • Thermal Infrared Remote Sensing (4) Staff

Prerequisites: Geography 115B or consent of the instructor.

Recitation 3 hours, seminar, 1 hour.

Theory and applications of thermal infrared remote sensing. Contact and remote measurements of energy exchanges at the earth's surface. Analysis of thermal imagery and application to microclimate, soils, and energy conservation. Seminar on topics of individual student research and reading.

*See N-2 for 198/199 independent studies unit limitations.

272 • Quantitative Biogeography (4) Strahler

Prerequisites: Geography 165, 173 & 173L and consent of instructor.

Recitation, 2 hours. Seminar, 2 hours.

Mathematical modeling of patterns of migration, evolution, and extinction. Stochastic processes and Monte Carlo techniques of simulation.

273 • Natural Vegetation Classification, Inventory, and Dynamics (4) Strahler

Prerequisites: Geography 165 or 167, Geography 115B, and 173 & 173L or consent of instructor.

Recitation, 2 hours. Seminar, 1 hour.

Problems in analysis of natural vegetation resources. Classification systems, sampling techniques, and applications of ecology and remote sensing to defining, mapping, inventorying and exploring the dynamics of natural vegetation units.

274 • Classification and Clustering in Geographic Data Analysis (4) Staff

Prerequisites: Geography 115B, 173, 173L.

Lecture, two hours. Seminar, one hour.

Classification and clustering in real and metric space with applications for human geography, physical geography, and remote sensing. Spatial weighting and spatial constraints in classification models.

275 • Seminar in Geographical Information Systems (4) Simonett, Tobler

Prerequisites: Geography 125 or equivalent; consent of instructor.

Study of current trends in geographically oriented information processing systems.

292 • Mathematical Models in Physical Geography (4) Staff

Prerequisites: Geography 168 and 173 & 173L or equivalent.

Seminar, 3 hours.

Mathematical models of water and energy flows through the atmosphere, in stream channels, on and in soils and vegetation.

293 • Mathematical Models in Human Geography (4) Staff

Prerequisites: Geography 101 & 101L and 173 & 173L or equivalent.

Mathematical models of socio-spatial and

econo-spatial processes; cartographic and other methods of representation.

596 • Directed Reading and Research (2-8) Staff

Prerequisites: Consent of instructor and Department Chairman.

A written proposal for each tutorial must be approved by the Department. No more than half the units necessary for the Master's Degree may be taken in 596.

598 • Master's Thesis Research and Preparation (1-6) Staff

Prerequisites: Consent of instructor and Graduate Division.

Research toward and writing of thesis. No unit credit allowed toward Master's degree. S/U grading.

599 • Ph.D., Dissertation Preparation (1-6) Staff

Prerequisites: consent of instructor and graduate advisor.

Research toward and writing of dissertation. Instructor should be chairman of student's doctoral committee.

Geological Sciences

Professors

Tanya M. Atwater, Ph.D., *Scripps Institution of Oceanography; plate tectonics, ocean floor spreading.*

John C. Crowell, Ph.D., *UC Los Angeles; structural geology, tectonics.*

⁴Richard V. Fisher, Ph.D., *University of Washington; physical stratigraphy, pyroclastic rocks.*

¹Michael D. Fuller, Ph.D., *Cambridge University; geomagnetism.*

Clifford A. Hopson, Ph.D., *Johns Hopkins University; igneous and metamorphic petrology.*

Robert M. Norris, Ph.D., *Scripps Institution of Oceanography; geomorphology, quaternary geology, marine geology.*

Arthur G. Sylvester, Ph.D., *UC Los Angeles; structural geology, petrofabrics, neotectonics. (Chairperson)*

George R. Tilton, Ph.D., *University of Chicago; geochemistry, isotope geology.*

James W. Valentine, Ph.D., *UC Los Angeles; paleobiology.*

Donald W. Weaver, Ph.D., *UC Berkeley; stratigraphic paleontology, engineering geology.*

William S. Wise, Ph.D., *Johns Hopkins University; mineralogy, geochemistry.*

Associate Professors

James R. Boles, Ph.D., *Otago; sedimentary petrology.*

*Edward R. Keller, Ph.D., *Purdue University; geomorphology, hydrology, environmental geology.*

Bruce P. Luyendyk, Ph.D., *Scripps Institution of Oceanography; marine geophysics, paleomagnetism.*

Ken C. Macdonald, Ph.D., *Massachusetts Institute of Technology; marine tectonics; marine seismology and magnetism.*

William A. Prothero, Ph.D., *UC San Diego; marine seismology; seismic instrumentation.*

Assistant Professors

Stanley Awramik, Ph.D., *Harvard University; biogeology, paleontology.*

², ³James M. Mattinson, Ph.D., *UC Santa Barbara; petrology, and isotope geology.*

Professors Emeriti

Preston Cloud, Ph.D., *Yale University; biogeology; paleontology.*

George Tunell, Ph.D., *Harvard University.*

Robert W. Webb, Ph.D., *California Institute of Technology; mineralogy, geomorphology.*

Assistant Research Geologists

Nicholas Christie-Blick, Ph.D., *UC Santa Barbara; structural geology.*

Dean A. Clauter, Ph.D., *University of Pittsburgh; geophysics, magnetism.*

Richard E. Dodson, Ph.D., *University of Pittsburgh; geophysics, magnetism.*

*Joint appointment with Environmental Studies.

Yozo Hamano, Ph.D., *University of Tokyo; geophysics, magnetism.*

¹Absent on leave, Fall 1980

²Absent on leave, Winter 1981

³Absent on Leave Spring 1981

⁴Absent on Leave 1980-81

⁵Absent on Leave in Residence, 1980-81

Concerns of the department

Geology is the science of the earth—the study of its rocks, minerals, records of ancient life, and of the physical, chemical, and biological processes, past and present, at work in the earth's interior, on its surface, and within its envelope of water and air. Its methods are applicable to studies of the moon and planets. From these arise a better understanding of our surroundings, as well as knowledge applicable to the solution of many of the pressing environmental problems now confronting humanity. The Department's program leading to the bachelor's degree provides the background in elementary geology, basic sciences, and mathematics necessary to undertake graduate work in geology or closely related fields such as geophysics, geochemistry, biogeology, or oceanography. While providing a basic foundation in geology, the program retains the flexibility to permit preparation for ultimate specialization in related fields. Thus, in close consultation with the undergraduate adviser, students develop individual programs tailored to their needs and interests.

Departmental advising

An undergraduate adviser advises majors and prospective majors and assists in their program planning. A graduate adviser, aided by a guidance committee, assists M.A. and Ph.D. candidates. Prospective students should consult the appropriate adviser before beginning their calendars of study.

Bachelor of Arts

Preparation for the major

The required preparation for the major consists of the following lower division courses (or their equivalents if taken elsewhere):

Chemistry 1A-B-C, General Chemistry

Chemistry 1AL-BL-CL, General Chemistry Laboratory

Physics 1,2,3,3L,4,4L, Physics for Science Majors

Mathematics 3A-B-C, Calculus with Applications, and

Math 5A, Applied Differential Equations.

Geology 2, General Geology: Physical

Geology 2L, Laboratory, General Geology: Physical

Geology 3, General Geology: Historical

Geology 3L, Laboratory, General Geology: Historical

Geology 26, Minerals

French, German, Spanish, or Russian - 12 units (levels 1-3)

8 additional units of either Chemistry *or* levels 4 and 5 of the same foreign language used above *or* Mathematics *or* Physics beyond the above requirements.

See Upper Division Major, below, for courses especially needed in preparing for concentrations in

Paleontology, Geophysics, and Geochemistry.

Transfer students must consult the department

undergraduate adviser concerning the equivalency of their courses to the above requirements.

Upper Division major

36-48 upper division units are required, selected from Geology and related fields in consultation with the department Undergraduate Adviser. At least 24 units in Geology are required, normally including Geology 118. Recommended courses are typically chosen from 100, 102A, B, C, 103, 103L, 104A or 104B, 110, 111, 111L, 112 or 122, 114, and 124. Related fields include biogeology, geochemistry, geophysics, and mathematics.

Geology majors may elect to complete a concentration in paleontology, geophysics, or geochemistry as shown below. However, completion of a concentration is voluntary and will not be acknowledged on the student's transcripts or diploma.

Paleontology: Preparation for a paleontology concentration should include Biology 11A—B—C and 136A—B—C.

The following courses should be considered as part of or in addition to the upper division major: Geology 102B, 103, 104A or B, 111, 111L, 112, 114, 118B, 190; Geology 122, 123 and 105 are also recommended; Biology 130A—B—C, Zoology 140; and 15 additional units in Biology from an area of interest. For example, students interested in invertebrates should include most of the following: Biology 101, Zoology 112A, Biology 139, 144, 145A—B, and 146.

Geophysics: Preparation for a geophysics concentration should include Mathematics 5A (or 119 or 124A), 5B—C or 124B—C, and 6A or 104A or Computer Science 10. A foreign language is not normally required.

The following courses should be considered as part of or in addition to the upper division major: Geology 102A—B, 103, 103L, 104A or B, 131, 136, 137, 138, and 157 (Geology 114 and 135 are recommended); Physics 105A—B, 110A—B, (Physics 127A and/or B, 110C, and 141 are recommended); Chemistry 113A (or Physics 5 or Geology 124). Geology 118 is not normally required.

Geochemistry: Students interested in a geochemistry concentration should consult with the Geological Sciences undergraduate adviser concerning appropriate courses. Normally, geochemistry students complete Chemistry 113A—B—C during their junior or senior year.

Graduate Programs

ADMISSION REQUIREMENTS AND PREREQUISITES

The Department awards the M.A. and Ph.D. degrees in Geology. In addition to fulfilling the general requirements of the Graduate Division (see Graduate Division Announcement, published by Graduate Division), a candidate for admission must present recent scores on the Verbal, Quantitative and Analytical parts of the Graduate Record Examination. The deadline for all applications and materials is February 15, but applications should be submitted well ahead of the deadline to insure against unforeseen

delays. All applications to our graduate program in geology are processed by the Department in early March and students are informed by the Graduate Dean of acceptance or denial in middle or late March. Students are normally not accepted into our graduate program during Winter and Spring quarters unless approved in early March of the previous year.

Entering students will confer with the Graduate Adviser and a placement committee to determine a suitable program of study, based on each student's objectives and previous training. The Department encourages students with bachelor's degrees in sciences other than geology to apply for admission. Normally, graduate students admitted will be expected to have satisfied the Department's foreign language requirement for the B.A. or an acceptable equivalent, or to complete the requirement after admission.

Master of Arts

Requirements

1. An integrated course of study recommended by a placement committee and the Graduate Adviser.

2. Demonstration of a scientific reading knowledge of any modern foreign language, or the satisfactory completion of a significant and related set of courses (eight units) supplementary to the student's program and normally from the sciences outside the department.

3. Preparation of a satisfactory thesis (with 30 units of course work, at least 12 of which must be in graduate courses), or

4. Satisfactory completion of such examination as the student's guidance committee shall prescribe if the examination plan is followed (with 36 units of course work, at least 18 of which must be in graduate courses).

Doctor of Philosophy

Requirements

1. The student must demonstrate the following proficiencies by course work and by written departmental qualifying examinations: a. Superior competence in the field of specialization. b. Broad knowledge in the geological sciences, particularly those aspects that relate to the specialization.

Geological Sciences

Lower Division courses

2 • General Geology: Physical (3) Staff [B1]

Lecture, three hours.

An introduction to the science of the earth; properties and processes of the earth's interior and crust and their interaction with surface processes which modify and shape man's physical environment. (F,W,S)

2L • Laboratory, General Geology: Physical (1) Staff

Should be taken concurrently but may follow Geology 2. Laboratory, three hours.

Identification of common minerals and rocks. Introduction to topographic and geologic maps,

land forms, and geologic structures. Field trips. (F,W,S)

2XL • Physical Geology: Independent Project Laboratory (2) Staff

May be taken concurrently with or following Geology 2. (Not ordinarily open to students who have received credit for Geology 2L.) Laboratory, three hours; discussion, one hour; field trip.

Individual field, laboratory, or library research project resulting in term paper, under guidance of instructor as necessary. Field trips and preparatory material equivalent to much of that presented in Geology 2L.

3 • General Geology: Historical (3) Norris, Awramik [B1]

Prerequisite: Geology 2. Lecture, three hours.

Antiquity and history of the earth, its physical changes, and the record of biological evolution. (S)

c. Satisfactory knowledge of sciences other than geology which are germane to the fields of interest.

2. The student must demonstrate, by examination or course work, either: a. An excellent reading knowledge of one foreign language, generally French, German, or Russian, or an adequate reading knowledge of two languages other than English, or b. Competence in a science, mathematics, or in a field of study usually related to but not part of the area of specialization, and normally outside the Department of Geological Sciences.

3. On completion of requirements 1 and 2 above, the candidate pursues a plan of research leading to the doctoral dissertation. Before being formally admitted to candidacy for the doctorate, a comprehensive oral examination administered by the dissertation committee must be passed.

4. The dissertation, prepared in a professional style, must be approved by the committee, and the candidate is required to present its principal conclusions in open forum.

Career opportunities

There are numerous career opportunities in the geological sciences in educational, governmental, and industrial organizations. Professional activities may be concerned with research, teaching, production, environmental problems, or combinations of these. Students interested in further information should talk with the Undergraduate Adviser in the Department.

Teaching credentials

Students who complete a major in geology may be eligible to pursue a California teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180 Phelps Hall.

Correspondence information

Department of Geological Sciences, University of California, Santa Barbara, California 93106. Phone (805) 961-3471.

3L • Laboratory, General Geology: Historical (1) Staff

Should be taken concurrently but may follow Geology 3 Laboratory, three hours.

Elementary problems in paleontology and stratigraphy. (S)

4 • Introduction to Oceanography (4) Valentine, [B1]

Lecture, three hours; discussion, one hour

A broad introduction to oceanography covering the major physical, chemical, biological, and geological features of the oceans, their role in earth history, and potential use as a natural resource. (F,W,S)

18 • Field Studies in Geological Science (1) Staff

Prerequisite: Geology 2 or its equivalent (may be taken concurrently) or consent of instructor.

Four and one-half day field trip, Fall or Spring Quarter. Field studies under guidance of two or three staff members introducing the geology of California. Four trips offered in sequence: Fall: Imperial and Colorado Deserts **or** Eastern Mojave Basin; Spring: Death Valley **or** Saline Valley-Inyo-White Mtns., Mono Lake. (F,S)

26 • Minerals (5) Wise [B1]

Prerequisite: Chemistry 1A. Lecture, three hours; laboratory, six hours.

Properties, origins, associations, and determination of the more important ore and rock-forming minerals. (F)

30 • The History of Life (4) Awramik [B1]

Lecture, three hours; discussion, one hour.

The origin and evolution of life from its beginning over 3-1/2 billion years ago to the present day. Broad introduction to the complexity and diversity of life as revealed by fossils. (W)

98 • Readings in Geological Sciences (1-3) Staff

Prerequisite: Honors in geological sciences at Lower Division level, as determined by faculty sponsor and chairman of department.

Critical reviews and discussions of selected geological subjects. May be taken more than once. (F,W,S)

Upper Division courses

100 • Introduction to Geophysics (4) Fuller [B1]

Prerequisites: Geol. 2 or 3, and Math 3A and Physics 8A, or consent of instructor. Lecture, three hours; discussion, one hour.

Survey of major topics in geophysics at an elementary level; the figure of the earth, its gravitational and magnetic fields, seismology and the deep structure of the earth, heat flow, methods of geophysical exploration. The geophysical basis of plate tectonics and sea floor spreading. (S)

101 • Principles of Geology (4) Weaver [B1]

(Not open to students who have taken Geology 2.)

Lecture three hours; laboratory, three hours.

Geological principles and processes. Forces at work within the earth and upon its surface that change the physical and biological environments. Geologic time and the inevitability of change. Principally for non-majors. (Usually W)

102A • Petrology of Igneous Rocks (3) Hopson [B1]

Prerequisite: Geology 26 or 104A. Lecture, three hours.

Introduction to the occurrence, associations, tectonics, and petrogenesis of plutonic and volcanic rocks. Introduction to physical chemistry of magma systems; magmatic crystallization and differentiation, pluton emplacement, volcanic eruption mechanisms. (W)

102B • Sedimentary Petrology (3) Boles [B1]

Prerequisites: Geology 26, 110. Lecture, three hours; Field

The texture, mineralogy, classification, and primary structures of sedimentary rocks and their significance in relation to regional setting, environment of deposition, and post-depositional history. Field Study will emphasize interpretation of sedimentary sequences. (S)

102BL • Sedimentary Petrology: Laboratory (3) Boles [B1]

Prerequisites: Geol. 26, 102B, and 110 (102B normally taken concurrently). Lecture, one hour; Laboratory, five hours.

Practical experience in identification of sedimentary rocks, using the petrographic microscope. (S)

102C • Petrology of Metamorphic Rocks (3) Hopson [B1]

Prerequisites: Geology 102A or 102B. Lecture, two hours.

Introduction to the occurrence and petrogenesis of metamorphic rocks. Protoliths of metamorphic rocks; petrofabrics; metamorphic differentiation; metamorphic facies and facies series; granulization. Types of metamorphism and the tectonic setting. Extensive reading required. (S, Alt. Yrs)

103 • Fundamentals of Structural Geology (3) Crowell [B1]

Prerequisite: Upper Division Course in Geol., and a course in Physics. Lecture, three hours.

Studies of deformed rocks, folding and faulting, and geologic structures of the earth's crust. (W)

103L • Laboratory, Structural Geology (2) Crowell

Geology 103 to be taken concurrently. Laboratory, four hours; field trips.

Descriptive geometry applied to geologic problems, use of stereonet, structure contouring and isopaching, map interpretation, exercises in structural analysis and synthesis. (W)

104A • Field Studies in Geologic Methods (5) Sylvester and Staff [B1]

Prerequisites: Geology 2 and 2L or 101, and 3, 3L (or 195); consent of instructor. Lecture, one hour; laboratory, three hours; field, eight hours.

Introduction to the methods of geological observation and interpretation, with an emphasis on understanding earth processes in the field and reconstructing the physical history of the earth, the stratigraphic, petrologic, and structural relations of rocks; methods used in solving problems of the geological environment. **Restricted to majors.** (F)

104B • Field Methods (5) Norris, Weaver [B1]

Prerequisites: Any two of the following courses in geology: 102A, 102B, 103, 104A, 114, or 122. *Prerequisites may be taken concurrently.*

Geologic mapping on topographic maps and aerial photographs; use of geologic field instruments; field techniques; preparation of geologic maps and reports. (S)

105 • Marine Geology (4) Staff [B1]

Prerequisite: Geology 3, or 101, or consent of the instructor. Lecture, three hours; field trips.

Geologic processes in the sea; rocks and sediments of the sea bottom and the shoreline. (F)

106 • Geological Problems of the Human Environment (4) Keller [B1]

Prerequisite: Geology 2 or 101 or equivalent, or consent of instructor. Lecture, three hours; field trips.

Problems concerning earthquakes, mineral and energy resources, construction projects (dams, highways, tunnels, etc.) floods, beach erosion, etc. Principles of sound planning for the human use of the solid earth. (S)

109 • Geology of California (4) (alt. years) Norris [B1]

Prerequisite: Geology 3, or 101, or consent of the instructor. Lecture, three hours; field trips. (Usually W)

110 • Optical Mineralogy (5) Staff [B1]

Prerequisite: Geology 26. Lecture, three hours; laboratory, six hours.

Principles and methods of optical crystallography and optical mineralogy. (F,S)

111 • Principles of Paleontology (3) Valentine [B1]

Prerequisite: A beginning Biology course or consent of the instructor. Lecture, three hours.

The ecologic structure and evolution of the biosphere as illustrated by the fossil record, with special emphasis on the marine environment. (Geology majors will normally take 111L concurrently.) (F)

111L • Principles of Paleontology Laboratory (2) Valentine

Laboratory, six hours.

Laboratory and field exercises and projects in the identification and interpretations of fossil taxa and fossil communities. (Geology majors will normally take 111 concurrently.) (F)

112 • Stratigraphic Paleontology (4) (alt. years) Weaver [B1]

Prerequisites: Geology 104A, 111, or consent of instructor. Lecture, two hours; laboratory, three hours; field trips.

Principles of stratigraphic paleontology and the stratigraphic distribution of fossils. (Usually W)

113A • Ground Water Geology (3) Weaver [B1]

Prerequisites: Junior standing or consent of instructor. Lecture, two hours; laboratory, two hours.

Principles of ground water geology, including ground water occurrence and movement, exploration and development of ground water, and design of ground water wells. Discussion, laboratory and field problems. (W)

113B • Engineering Geology (3) Weaver, Keller [B1]

Prerequisites: Junior standing, Geology 106 or consent of instructor. Lecture, two hours; laboratory, two hours.

Application of geologic principles to civil engineering problems in landslides, dam construction, highway construction, shoreline protection, construction materials, and military operations. Discussion, laboratory and field problems. (S)

114 • Rocks (3) Staff [B1]

Prerequisite: Geology 26 or equivalent. Lecture, one hour; laboratory, six hours.

An introduction to the classification and identification of hand specimens of igneous, sedimentary, and metamorphic rocks. (W)

117 • Geomorphology (4) Norris, Keller [B1]

Prerequisite: Geology 3, or 101, or consent of instructor. Lecture, three hours; field

Evolution of the landscape and relief features of the earth. (F)

118 • Summer Field Geology (12) Staff [B1]

Prerequisite: *Geology 102A or 102B, 103, 104A, and 104B.* Eight weeks in the field during the summer.

Preparation of a geologic map, geologic sections, and a report on a selected region. (Summer)

119 • Field Investigations in Geology (5-9) Staff [B1]

Prerequisites: *Geology 104A and/or consent of instructor.*

Selected field areas are investigated as research problems. Content varies from year to year. (May be taken in lieu of Geology 118, with approval of the Department.) (Summer)

122 • Physical Stratigraphy (5) Fisher [B1]

Prerequisite: *Geology 102B or consent of instructor.*

Lecture, two hours; laboratory, six hours; and field trips.

Principles and processes involved in the development and description of stratified rock accumulations. (Usually F)

123 • Carbonate Sediments and Diagenesis (4) Staff [B1]

Prerequisites: *Geology 26.* Lecture, three hours; laboratory, three hours.

Origin, deposition, and diagenesis of carbonates. Analysis of carbonate platforms and basins, using modern and ancient examples.

124 • Geochemistry I (4) Tilton, Boles [B1]

Prerequisites: *Chemistry 1C, Mathematics 3C, and Geology 2 or 101.* Lecture, three hours; discussion, one hour.

Distribution and geochemical classification of the elements. Crystal chemistry. Solubility and chemical equilibrium in solutions. Phase diagrams, crystallizations of magmas and metamorphic reactions. (F)

125A • Geochemistry II (4) Tilton [B1]

Prerequisites: *Math 3B, Chem. 1C.* Lecture, three hours; discussion, one hour.

Geochemical classification and distribution of the elements. Partition coefficients and trace element fractionation in magmatic processes. Radiometric dating, use of strontium and lead isotopes as geochemical tracers. (W, alt. yrs.)

125B • Geochemistry III (4) Tilton [B1]

Prerequisites: *Math 3B, Chem. 1C.* Lecture, three hours; discussion, one hour.

Primarily extraterrestrial geochemistry. Origin, age, and abundance of the elements. Geochemical evolution of meteorites, the moon, and earth. (W, alt. yrs.)

126 • Experimental Methods in Geochemistry (3) Tilton [B1]

Prerequisite: *Geology 125A or B.* Lecture, two hours; laboratory, three hours.

Use of experimental techniques, including counting of alpha, beta, and gamma radiations applied to problems of geochemical interest. (S)

127 • Crystal Chemistry (4) Wise [B1]

Prerequisites: *Chemistry 1A—B—C, Mathematics 3A.*

Lecture, three hours; laboratory, three hours.

Introduction to symmetry operations, internal

symmetry, X-ray diffraction, and crystal chemistry. Systematic examinations of the structures, chemistry, and physical properties of the major rock-forming minerals. (W)

128 • Advanced Topics in Mineralogy (1-2) Wise

Prerequisites: *Geol. 127; consent of instructor.* Tutorial.

Individual topics involving advanced methods and problems in mineralogy. Each has a value of one unit and is largely autotutorial and self-pacing. Topics include X-ray diffraction (powder and single-crystal), universal stage, and ore microscopy. (F,W,S)

130 • Introduction to Theoretical Geophysics (4) Staff [B1]

Prerequisites: *Math 3C, Geol. 100B, field course in Geol., or consent of instructor.* Lecture, three hours; tutorial, one hour.

Methods of theoretical geophysics are introduced and applied to problems in gravitational and magnetic potential theory, wave propagation, and seismological applications. Designed to give a suitable background for the more specialized geophysical courses which follow. (Usually F)

131 • Field Geophysics. (4) Luyendyk [B1]

Prerequisites: *Either Geol. 100B, 136, or 137; consent of instructor.* Lecture, two hours; weekly field trips, nine hours average.

Field exercises in the techniques of exploration geophysics, including seismic refraction, gravity and magnetic surveying, and electrical methods. The field work will concentrate on selected areas of southern California. (S)

132 • Earthquake Seismology Lab (2) Prothero

Prerequisites: *Math 3A.*

Lecture, one hour; laboratory, two hours.

Practical seismology including: seismogram interpretation, seismic phases, travel time curves, using portable seismic recorders, locating earthquakes, earthquake magnitudes, focal mechanisms, surface waves, seismic hazards, and obtaining seismic data from data banks. May include field trip to seismically active area to obtain seismicity information. (W)

135 • Geological Mechanics (4) Macdonald [B1]

Prerequisites: *Math 3A, B, C, Physics 8A or equivalent (may be taken concurrently).*

Lecture, three hours; discussion, one hour.

Application of physical principles to solution of geologic problems. Concepts of stress, strain, elasticity, and viscosity, introduced with examples pertaining to formation of dikes, joints, faults, folds, laccoliths. (W)

136 • Geophysics (Seismology) (4) Prothero [B1]

Prerequisites: *One year college level calculus and physics; Math 5A recommended (may be taken concurrently).*

Lecture, three hours; discussion, one hour.

Seismic instrumentation, wave propagation, earthquake physics, surface waves, free oscillations, and seismic hazards. (W)

137 • Geophysics (Gravity and Geomagnetism) (4) Fuller, Luyendyk [B1]

Prerequisite: *One year of college level calculus, and physics; Math 5A recommended.* Lecture,

four hours.

The earth's gravity and magnetic fields, gravity and magnetic anomalies and their implications in oil and mineral exploration and plate tectonics. (F)

138 • Geophysics (Heat Flow and Physics of Earth's Interior) (4) Macdonald [B1]

Prerequisites: *One year college level calculus and physics; Math 5A, B, C recommended.*

Lecture, three hours; discussion, one hour.

Thermal history of the earth, cooling plates, heat sources and sinks, instruments and measurements, internal constitution, equations of state. (S)

140 • Ore Deposits (4) Wise [B1]

Prerequisites: *Geology 26 and 124, or permission of instructor.* Lecture, three hours; laboratory, three hours.

Geology and geochemistry of economic deposits of minerals. (W)

151 • Petrography of Igneous Rocks (3) Hopson [B1]

Prerequisites: *102A (may be taken concurrently), 110, and consent of instructor.* Lecture, one hour; laboratory, six hours.

Identification, classification, and interpretation of igneous rocks, using the petrographic microscope and hand lens. (W)

152 • Petrography of Metamorphic Rocks (3) Hopson [B1]

Prerequisites: *102C (normally taken concurrently), 110, and consent of instructor.* Lecture, one hour; laboratory, six hours.

Identification, classification, and interpretation of metamorphic rocks, using the petrographic microscope and hand lens. (S)

157 • Introduction to New Global Tectonics (4) Atwater, Luyendyk [B1]

Prerequisites: *Basic Geology and a year sequence in University Math and Physics.* Lecture, three hours; laboratory, three hours.

Introduction to sea floor spreading, plate tectonics, and continental drift. Geometry and evolution of present day plates. Measurement and calculation of plate motions. Geophysical and geological implications of resulting relative motions at plate boundaries. (W)

160A—B—C • Seminar in Geology (1-1-1) Staff

Prerequisite: *Junior major in Geology or consent of chairman. May be repeated for credit.*

Attendance at departmental "Journal Club" (Geology 260, Seminar in Geology) and brief written evaluations of the three papers which, in the student's judgment, were the best of the quarter. (F,W,S)

180 • Seminar in Volcanology (3) Fisher, Sylvester, Wise [B1]

Prerequisite: *Upper Division standing.* Lecture, one hour; seminar, two hours.

Seminar in current topics in volcanology. Course normally followed by a field trip to an active volcanic region. (Usually W)

188 • Field Studies in Neotectonics (1-3) Sylvester

Prerequisite: *Geology 103, 103L; senior standing and consent of instructor.* Field and tutorial.

Geodetic measurement of recent crustal

movements around active faults and volcanoes. Includes techniques and analyses of precision levelling, triangulation, trilateration, and tiltmetry. Field work arranged as opportune. Term paper required. May be repeated for maximum of 3 units. (F,W,S)

190 • Advanced Studies in Paleontology (1-4) Valentine, Awramik

Prerequisites: *Geology 111 and consent of instructor.* Laboratory, three to twelve hours.

Designed to meet the interests and needs of individual students. Selected readings and laboratory work in systematic paleontology; field studies of recent or fossil biotas; animal-substrate relations, biostatistics, etc. Term paper required. (On demand)

192 • Field Internship in Engineering Geology. (1-4) Weaver

Prerequisites: *Geol. 113 A and B, 3.0 GPA in major, and/or permission of instructor.*

Individualized, practical approaches to problems in engineering geology by working under faculty supervision as intern with local or state agencies or private organizations. Students will spend most of their effort in carrying out field work, but will prepare written reports. Only four units may apply to the major. (F,W,S)

194 • Group Studies for Advanced Students (1-5) Staff

Prerequisites: *Upper Division standing; consent of the instructor and department chairman.*

Intensive research or study by a small group of advanced students who share an interest in a topic not included in the regular departmental curriculum. Students may repeat the course; no more than five units will apply to the major.

***198 • Readings in the Geological Sciences** (2-4) Staff

Prerequisites: *Consent of the instructor and the chairman.*

Critical reviews and discussions of selected geological subjects. May be taken more than once at the option of the student; not more than four units may be included in the minimum requirements for the major. (F,W,S)

***199 • Independent Studies in Geology** (1-5) Staff

Prerequisite: *senior standing with a 3.0 grade-point average within the major, or by special permission. Petition required.*

Selected research under the direction of a faculty member. 199 Courses are limited to no more than five units in one quarter and no more than 12 units total. (F,W,S)

Graduate Courses

201 • Graduate Field Seminar (4) Staff

Required of entering graduate students.

A significant geological problem will be studied by means of field trips and by indoor seminars that stress a variety of disciplinary approaches. Faculty members representing several different fields will participate. An objective is to familiarize new students with some of the research methods and tools within the department and to show how multidisciplinary approaches

may be brought to bear on regional geologic problems. A term paper in the form of a research proposal will be required. (S)

204 • Geology of Fluids and Flow (4) Fisher

Prerequisites: *Consent of instructor* Lecture, three hours; field trips.

Depositional mechanisms and deposits of geologically significant fluid systems such as turbidity currents, pyroclastic flows, debris flows, and others. (Usually S, alt. yrs.)

206 • Volcaniclastic Rocks and Sediments (4) Fisher

Prerequisites: *Consent of instructor* Lecture, two hours; laboratory, six hours; field trips.

Genesis and description of volcaniclastic rocks—pyroclastic, hyaloclastic, and epiclastic. Dispersal and depositional mechanisms, including subaerial and submarine varieties. (Usually S, Alt. Yrs.)

207 • Diagenesis of Clastic Rocks (3) Boles

Prerequisites: *102B, 124, 110, or consent of instructor.* Lecture, two hours; laboratory, three hours.

Diagenesis of clastic rocks including volcanic tuffs, sandstones and shales. Course emphasizes controls of pressure, temperature, and solution chemistry to diagenesis and relates these controls to depositional and post-depositional environments. Lab includes application of thin section, X-ray diffraction, cathode luminescence to solving diagenetic problems. (Usually S)

210 • Paleogeology: Principles and Approaches (4) Valentine

Prerequisite: *Consent of instructor.* Discussion, three hours.

Application of paleontologic approaches to the interpretation of ancient environments and the solution of paleobiological problems. Laboratory, field, or library research leading to a term paper. (Usually S)

212 • Seminar in Stratigraphy and Paleontology (2) Weaver

Prerequisites: *Geology 111, 112.* Discussion, two hours.

A review and discussion of selected current and classic works in the field of stratigraphy and paleontology. (Usually W)

214 • Seminar in Marine Geophysics (4) Macdonald & Staff

Prerequisites: *Consent of instructor.* Seminar, three hours.

Current discoveries and unsolved problems in marine geophysics. Instruments and methods of study. Appropriate for majors in geology and physics. May be repeated for credit.

215 • Pre-Phanerozoic Biogeology (4) (Alt. years) Awramik

Prerequisites: *Advanced standing in geological and/or biological sciences; consent of instructor.*

Lecture, two hours; seminar, two hours.

Problems of pre-Phanerozoic biogeology. Topically oriented lectures and seminars dealing with the nature of the early biosphere, atmosphere, and hydrosphere. Emphasis on the fossil record, both stromatolites and microfossils.

218 • Micropaleontology (4) Weaver

Prerequisites: *Geology 111, 112 or consent of*

instructor Lecture, two hours; laboratory, six hours. (On demand)

220 • Biogeology (4) Awramik

Prerequisites: *Consent of instructor.* Lecture, one hour; seminar, one hour; laboratory, two hours.

Advanced topics in biogeology. Deals primarily with Phanerozoic and contemporary problems bearing on the interpretation of global history. Emphasis will be on student projects designed to develop research skills and techniques. (Usually W, Alt. Yrs.)

221 • Seminar in Petrofabrics (4) Sylvester

Prerequisite: *Geology 103 and 110, or consent of instructor.* Lecture, two hours; laboratory, six hours.

Consideration of theoretical, experimental, and empirical aspects of microscopic analysis of metamorphic tectonites. (Usually W, Alt. Yrs.)

223 • Seminar in Petrology (4) Hopson

Prerequisite: *Geology 102A, 102C.* Discussion, three hours.

Selected topics in igneous and metamorphic petrology. (S, Alt. Yrs)

224 • Advanced Volcanology (4) Fisher, Hopson, Sylvester, Wise

Prerequisites: *102A, B, and BL, 124, and 151.* Lecture, two hours; laboratory, six hours.

The study of volcanic vent areas, hypabyssal rocks, mineralization and hydrothermal alteration; eruption processes and mechanisms of emplacement of volcanic rocks; growth of active volcanoes; geophysics and geochemical surveillance; diagenetic alteration and secondary mineralization.

225 • Advanced Igneous Petrology (4) Hopson

Prerequisite: *Geology 102A.* Lecture, two hours; laboratory, six hours.

The study of igneous rocks and their origins, with emphasis on their petrography, physical chemistry, and field relations. (Usually F, Alt Yrs.)

226 • Thermodynamics and Petrologic Applications (4) Wise

Prerequisite: *A course in physical chemistry.* Lecture, three hours; laboratory one hour.

Derivation of first, second, and third laws thermodynamics. Application of free energy, entropy, and heat capacity calculations to petrologic problems. (S, Alt. Yrs.)

227 • Mineral Paragenesis (2) Wise

Prerequisite: *Geology 128, or consent of instructor.*

Lecture, two hours

Application of mineral data, such as composition and structural state, to rock origins. (S, Alt. Yrs)

227L • Laboratory, Mineral Paragenesis (2) Wise

Geology 227 to be taken concurrently. Laboratory, six hours.

Practical application of mineral data, such as composition and structural state, to rock origins. (S, Alt. Yrs.)

228 • Isotope Geology (3) Tilton

Prerequisite: *Geology 125.* Lecture, three hours.

Methods of age determination including dating of igneous rocks and sediments. Interpretation of

*See N2 for 198/199 independent studies unit limitations

discordant lead ages. Use of lead and strontium as natural tracers. Light stable isotopes, with emphasis on oxygen. (Usually W, Alt Yrs)

229 • Analytical Techniques in Geochemistry (1-3) Wise

Prerequisites: Consent of instructor. Autotutorial.

Autotutorial modules in the theory and practice in methods of geochemical analysis. Modules include electron microprobe (3 units), X-ray fluorescence (1 unit), and atomic absorption spectroscopy (1 unit). (F,W,S)

230 • Field Studies in Tectonics (4) Crowell

Prerequisite: Geology 201A or consent of instructor. Seminar, discussion, and field trips.

Advanced seminar on a local tectonic problem. (S)

231 • Structural Analysis of Deformed Rocks (3) Sylvester

Prerequisite: Geology 103 or equivalent. Seminar, three hours, and field trips

Review of selected classical and current works dealing with geometrical and statistical analysis of tectonites on the microscopic and megascopic scales. Computer analysis of field measurement data. (On demand)

235 • Plate Tectonics (3) Luyendyk

Prerequisite: Geology 136 or 137; Geology 4 or 105 recommended. Lecture and discussion, three hours.

Plate tectonics principles from a geometrical standpoint. Discussions will center around history of the ocean basins and plate movements. (W)

245 • Seminar in Neotectonics (3) Sylvester

Prerequisites: Geology 103, 103L, or equivalent; consent of instructor. Seminar, three hours.

Observation, interpretation, and significance of Holocene, historic and current crustal movements caused by faulting, volcanism, hydrocompaction and isostatic adjustments. Seminar and field trips. (Usually W.)

247 • Seminar in Quaternary Geology (3)

Norris, Keller

Prerequisite: Geology 117 or consent of instructor.

Discussion, three hours.

Selected topics in Quaternary geology. Subject matter will change from year to year. May be repeated for credit. (Usually W)

249 • Seminar in Structure and Tectonics

(4) Crowell

Prerequisite: Consent of instructor. Discussion, three hours; field trips.

Topical structural geology and tectonics. (F, Alt. Yrs.)

251 • Interpretation Theory in Geophysics

(3) Luyendyk, Macdonald

Prerequisites: Consent of Instructor. Seminar, three hours.

Interpretation of geophysical data by direct and indirect methods, with the aim of determining subsurface geologic structure. Exercises will in-

clude modeling and inversion of either magnetic, gravity, and seismic data. Content will vary from year to year. May be repeated for credit.

252 • Geophysical Time Series Analysis (3) Prothero

Prerequisites: Math 5A, B, C, or equivalent. Seminar, three hours.

Basic principles of time series analysis and signal processing. Applications to geophysical data, including Fourier transforms, convolution, filtering, confidence limits, response functions, collection and processing of data, noise, power spectral density, and cross-correlation. Problems requiring the use of the computer are assigned. (Usually F)

253 • Earth's Magnetic Field (3) Fuller

Prerequisites: Geol. 137 or equivalent. Seminar, three hours.

A discussion of the earth's magnetic field and models of its origin. The present morphology and the paleomagnetic record of the history of the field. Particular attention will be paid to secular variation and to reversals. The principles of magnetohydrodynamics as applied to the origin of the field in the core of the earth will be developed

254A • Physics of Rock Magnetism (3) Fuller

Prerequisites: Geol. 137 or equivalent. Seminar, three hours.

A discussion of the physical principles of the magnetism of rocks. Molecular field and exchange models of magnetism. Domain studies. The processes of magnetization of single domain and multidomain material applied to the natural magnetic phases found in rocks.

254B • Paleomagnetism (3) Fuller

Prerequisites: Geol. 137 or equivalent. Seminar, three hours.

The methods and principal results of paleomagnetism. The collection, measurement, and statistical analysis of paleomagnetic samples. The paleomagnetic record of the geomagnetic field. The test of continental drift and the application of paleomagnetism to plate tectonics.

255 • Advanced Seismology (3) Prothero

Prerequisites: Math 5A, B, C or equivalent. Discussion, three hours.

Selected topics in advanced seismology, such as seismograph theory, body and surface wave propagation, free oscillations of the earth, earthquake physics, strong motion seismology, earthquake/explosion discrimination. Applications to the study of deep structure of the earth. May be repeated for credit. (Usually S)

260 • Seminar in Geology (1) Staff

Required of all first year graduate students. One hour per week.

Presentation and discussion of current research, and reviews of the literature on selected geologic concepts. Students will present material reflecting their interests in geology for critical appraisal, of both content and manner of presentation, by selected members of the seminar. Em-

phasis will be placed on assisting students in developing professional speaking style. May be repeated for credit. (F,W,S)

270 • Seminar in Geologic Problems (1-3) Staff

Prerequisite: Graduate standing. Discussion, one to three hours.

Review and discussion of a current problem in geology. Content is variable and depends on student interest. (On demand)

280 • Seminar in Field Geology (1-4) Staff

Field trips of one day or more, organized as opportune. Appropriate report required for each trip. Credit is one-half unit per day in the field, with a maximum of one unit for any trip. May be repeated for a maximum of eight units each academic year. S/U grading (F,W,S)

292 • Field Internship in Engineering Geology (1-4) Weaver

Prerequisites: Geol. 113 A and B, and/or consent of instructor.

Practical experience in problems in engineering geology, working under faculty supervision as intern with local or state agencies or private organizations. Students will spend most of their effort in field research, but also will prepare written reports. Only four units may apply to the graduate unit requirement for the M.A. degree. (F,W,S)

596 • Directed Reading and Research (2-6) Staff

Prerequisites: Consent of instructor and graduate adviser.

Individual tutorial. Written proposal for each tutorial must be approved by the instructor and the department chairman, and filed with the Graduate Division. No more than half the graduate units necessary for the master's degree may be taken in 596. (F,W,S)

597 • Individual Study for Ph.D. Examinations (1-12) Staff

Prerequisites: Consent of instructor and graduate adviser.

Instructor should be student's major professor or chairman of his committee. No unit credit allowed toward advanced degree. (F,W,S)

598 • Master's Thesis Research and Preparation (1-6) Staff

Prerequisites: Consent of instructor and graduate adviser.

Instructor should be chairman of the student's thesis committee. Maximum of 12 units total. No unit credit allowed toward master's degree. (F,W,S)

599 • Ph.D., Dissertation Preparation (1-6) Staff

Prerequisites: Consent of instructor and graduate adviser. Limited to terminal preparation.

Instructor should be chairman of the student's doctoral committee. (F,W,S)

Germanic and Slavic Languages and Literatures

Professors

Stuart Atkins, Ph.D., *Yale University; classical German literature, Goethe, Heine, and comparative literature.*

Richard C. Exner, Ph.D., *University of Southern California; 19th and 20th Century German literature, lyric poetry and essay, comparative literature, Stifter, Hofmannsthal, Thomas Mann, tragedy.*

Gerhart Hoffmeister, Ph.D., *University of Maryland; Baroque and Romantic literature, comparative literature.*

¹ Donald B. Johnson, Ph.D., *UC Los Angeles; Russian linguistics, structural literary criticism, Nabokov.*

Ursula R. Mahlendorf, Ph.D., *Brown University; expressionism, contemporary German literature, literature and psychology. (Chairperson)*

John T. Waterman, Ph.D., *UC Los Angeles; German philology and linguistics, Gothic, Old High German*

Associate Professors

Günther H. Gottschalk, Ph.D., *University of Southern California; general philology, history of the German language, modern syntax, phonetics, selected 20th century authors.*

Albert Kaspin, Ph.D., *UC Berkeley; 19th Century Russian prose writers, Russian drama, Russian folklore.*

Torborg L. Lundell, Ph.D., *UC Berkeley; contemporary Swedish literature, Swedish film, film criticism and theory, Swedish language, comparative literature, folk and fairy tales.*

Lecturers

Clifford A. Barraclough, M.A., *University of Washington; German language and pedagogy.*

Neil F. Granoien, M.A., *UC Los Angeles; 19th and 20th Century Russian literature.*

Roselinde Konrad, *German structure and stylistics, translation and interpretation.*

Mstislav W. Kostruba, M.A., *UC Santa Barbara; Russian and Serbo-Croatian languages, Russian poetry of the Golden Age.*

Professors Emeriti

William F. Holtrop, Ed.D., *UC Los Angeles.*

Rolf N. Linn, Ph.D., *UC Los Angeles.*

Harry Steinhauer, Ph.D., *University of Toronto.*

¹Absent on Leave Fall 1980

Concerns of the department

The curriculum for the major in either German or Russian

is designed to provide a survey of the literature from its beginnings to the present. Each major student also studies the historical development of the language and is exposed to the modern language in almost all upper division classes. An appropriate linguistic background for the major is gained in lower division courses.

The upper division unit requirement for the major assures the student an adequate and well-rounded background in both language and literature. Within the field of literature, the department is especially strong in modern and contemporary German literature, offering a number of courses dealing with the works of Nobel Prize winners Thomas Mann, Hermann Hesse, and Heinrich Böll. Hugo von Hofmannsthal, Heinrich Mann, Bertolt Brecht, and Günter Grass are also well represented. In Russian, the works of Vladimir Nabokov are given special prominence. In both German and Russian, of course, the great authors of the 18th and 19th centuries continue to be studied extensively.

The department also offers a one-year sequence in elementary Swedish and upper division courses in translation in Scandinavian literature and Swedish film. German majors may find Swedish language and literature useful to their major.

Departmental advising

All undergraduate majors and graduate students are assigned an adviser at the beginning of their studies. There is a panel of such counsellors at both levels, so that students may change advisers if they so desire. All advisers keep posted office hours and are available by appointment as well.

The graduate faculty meets once a year to review the progress of each graduate student. The adviser then meets with the student and discusses the review in detail.

At the beginning of the year in which the student expects to sit for the qualifying examinations, either for the M.A. or the Ph.D., a committee of three professors is appointed — in consultation with the student — whose function is to supply advice and guidance. This committee will, at the proper time, draw up the examination, administer it, and conduct the oral examination.

The departmental office is staffed by personnel experienced in university policies and procedures. The office is open daily during the week throughout the calendar year. Written queries receive prompt attention.

Degrees

In German there are programs of study leading to the B.A., M.A., and Ph.D. degrees. There also is a one-year post-graduate program leading to certification as a translator-interpreter. In Russian there is a B.A. program. A relatively

small staff teaching classes of ten to twenty students at the upper division and graduate levels assures a maximum degree of personal contact between student and instructor. We have a high number of distinguished scholars of international reputation, most of them authors of authoritative books in their area of specialization.

Students majoring in German may spend their junior year at our Education Abroad Center at Goettingen. Russian majors may compete for an opportunity to spend a semester at Leningrad University.

Bachelor of Arts—Germanic languages and literatures

Preparation for the Major

Required with grades of C or higher:

German 1, 2, 3, 4, 5, 6 or equivalent levels in German 14 or placement beyond German 6 in departmental placement examination.

German 8A—B (Conversation and Composition) is required only for students in the Language and Civilization emphasis.

Recommended: History 4A—B—C (Western Civilization).

Students who wish to make German their major subject must have maintained an average grade of at least C in the college courses in German taken prior to their junior year. Students who have completed a more advanced course in a sequential series (e.g., German 1, 2, 3, 4, 5, 6) will not be permitted to take a course that is lower in the series.

Upper Division Major

Completion of one of the following emphases is required.

1. *Literature.* This emphasis is designed for students who are interested in a rigorous liberal arts education and for those who intend to pursue a graduate career in literary studies or in library science. 42 upper division units are required, including German 100 (Introduction to the Study of German Literature), 101A—B (Advanced Composition and Conversation), 115A—B—C (Survey of German Literature), and 120 (History of the German Language). The remaining electives will be selected from upper division German offerings with no more than 8 units each from literature in translation and language courses. Up to 8 units of upper division electives in related fields may be accepted into the upper division major by petition.

A year of study abroad at a German-speaking institution of higher learning is highly recommended. Students who intend to pursue German at the graduate level are encouraged to supplement their major by selecting, in consultation with their major adviser, 20 units of courses from another literary, historical or philosophical discipline. Native speakers of German should substitute German 110A—B (Stylistics) for German 101A—B (Advanced Composition and Conversation).

2. *Language and Civilization.* A This emphasis is designed especially for students who wish to enter the Translator/Interpreter Program, the teaching credential program, a master's program with a teaching emphasis, as well as for those who wish to enter politics of business. 40 upper division units are required, including German

101A—B—C (Advanced Composition and Conversation), 107A—B (History and Culture of German-Speaking Countries), and one course from the 115 series (Survey of German Literature). The remaining units are to be chosen from upper division German courses in literature, culture, and language. No more than 8 units of literature in translation and 16 units of language courses may be applied to the upper division major. Up to 8 units of upper division courses in German history, German art, and German politics may be applied to the upper division major by petition. One year of study abroad at a German-speaking institution of higher learning is highly recommended. Students are encouraged to supplement their major by completing 20 or more upper division units in another discipline such as political science, history, economics, in one of the sciences or in engineering. Native speakers of German should substitute German 110A—B (Stylistics) for German 101A—B—C (Advanced Composition and Conversation).

The major in German who goes to Goettingen under the Education Abroad Program is expected to do 12 units beyond the required course 101A—B, Advanced Composition and Conversation (GC 106A—B—C, German Grammar and Composition), of the forty-two required for the major on this campus, either before or after the year abroad. (See also the senior residence requirement in **H5**.) Majors are encouraged to take German 120, History of the German Language, at UCSB, since it is not offered at Goettingen. All Goettingen Center literature courses are acceptable for the major in German, including GC 134, German Folklore.

There is a sixteen unit limit on the amount of major credit allowed for language courses completed at UCSB and at Goettingen. This is the unit value of language courses offered at UCSB. Hence, students who take our sixteen unit language courses (101A—B, Advanced Composition and Conversation, and 110A—B, Stylistics) will then receive no credit for the language portion (12 units) of the required intensive program at the Goettingen study center. Students who have taken 101A—B (Advanced Composition and Conversation) for eight units would then receive eight more units at Goettingen for credit in the major.

Bachelor of Arts—Slavic languages and literatures

Preparation for the major

Required with grades of C or higher:

Russian 1, 2, 3, 4, 5, 6, or equivalent as determined by departmental placement examination.

Russian 8A—B—C (Conversation and Composition).

Recommended: History 4A—B—C (Western Civilization) and Russian History 135A—B—C.

Students who wish to make Russian their major subject must have maintained an average grade of at least C in the college courses in Russian taken prior to their junior year. Students transferring from other institutions may be tested by examinations. Students who have completed a more advanced course in a sequential series (e.g., Russian 1, 2, 3, 4, 5, 6) will not be permitted to take a course that is lower in the series.

Upper Division major

The Russian major consists of forty upper division units in Russian courses including: Russian 101A—B—C (Advanced Russian: Third Year), and 108 (The Russian Language: Morphology). A minimum of eight units must be selected from: Russian 102 (Russian Composition), 103 (Chekhov's Short Stories), 105 (Pushkin), 107 (Nabokov), 121 (The Russian Short Story), 122 (The Novella), 123 (Russian Poetry of the Golden Age). A minimum of 8 units must be selected from 115AB (Survey of Russian Literature), 125 (Twentieth Century Russian Literature), and 127 (The Silver Age).

In the literature-in-translation courses, Russian majors will be required to read a significant portion of the material in the original language.

UCSB participates in a national program through which sixty students a year spend a semester studying at Leningrad University in the USSR. Outstanding students have a good chance of selection. Financial assistance is available. The major in Russian who spends a semester studying in the Soviet Union is expected to do 12 units beyond the required course 101A—B—C (Advanced Russian: Third Year) of the forty required for the major on this campus, either before or after the stay abroad. (See also the senior residence requirement in **H5**.)

The Translator-Interpreter Program in German

In addition to the general requirements of the Graduate Division, the following departmental requirements apply:

Admission requirements and prerequisites

1. A bachelor's degree with a major in German and at least 24 upper division units in another approved field (normally a combination of courses in history and the social sciences); *or* a B.A. with a major **other** than in German and at least 24 upper division units of course work in German (additional courses in history and the social sciences may at times be required).

2. An academic year's study as a regular student at a recognized university in a country in which German is the national language (including German-speaking Switzerland). This prerequisite is normally absolved by participation in UC's Education Abroad Program.

3. Achieving a satisfactory score on the Advanced German Test of the Graduate Record Examination (Educational Testing Service).

Certificate requirements

This is a one-year, post-baccalaureate course of study to prepare the student for qualification as a certified translator-interpreter of German. Although administered through the Graduate Division, the program is professionally oriented and practical in nature. It is not part of our graduate program as such (M.A., Ph.D.), nor may the credits earned in the Program be applied towards an advanced academic degree in German literature. The goal is to prepare the student for the final qualifying examinations which must be passed in order to earn the University Certificate in Trans-

lating and Interpreting. The Translator-Interpreter Program enjoys the same status as any other Certificate Program offered by the University of California; that is, the University attests to the professional competence of our certificate-holders. Most of the courses will be taught by individualized instruction, thus allowing the student to advance according to ability and personal motivation. An average of thirty units of course work will be required by way of preparation for the certifying examinations. All courses are graded on the basis of "Satisfactory-Unsatisfactory."

Prospective graduate students who are also interested in earning a Translator-Interpreter Certificate, and who can meet the admission requirements, should plan on spending an extra year of *full-time* study preparing for the examinations upon which certification depends.

Master of Arts—Germanic languages and literatures

Admission requirements and prerequisites

In addition to the general requirements of the Graduate Division, the following departmental requirements apply:

1. All applicants for admission to our graduate program must take the Advanced German Test administered by the Educational Testing Service. The location of testing centers and dates when this test is offered may be determined by writing to Graduate Record Examinations, Educational Testing Service, Box 955, Princeton, New Jersey 08540. Results of the test must be available to us before a student's application can be considered complete.

2. The student must have an undergraduate major in German or its equivalent. Candidates who are deficient in this respect will take the necessary undergraduate courses to make up the deficiency before or concurrent with beginning work in the master's program.

Degree requirements

1. The Department offers the M.A. degree under Plan II (without thesis) only. Candidates for the M.A. may prepare themselves for one of two types of qualifying examination (all other requirements are the same for all candidates):

Type A is primarily designed for those who plan to go directly into teaching at the high school or junior college level. The student may not take more than 12 units of undergraduate work. The three-hour written examination is intended to test the candidate's command of factual information. The candidate is also required to prepare and deliver two oral presentations: a) an analysis appropriate to a high school class of a literary selection; b) an analysis appropriate to a high school class of a feature of language structure. The candidate is given 48 hours in which to prepare the oral presentations, each one of which is to be no less than 30 minutes and no longer than one hour in length.

Type B is designed for those students who plan to go on for the doctorate. The student may not take more than 12 units of undergraduate work. The written examination of at least four hours is primarily intended to demonstrate the student's ability to interpret literature in a professional manner. The student should also be able to exhibit a reasonably good command of research methods and proce-

dures. This examination may be followed by a one-hour oral examination.

A graduate student who decides to work toward the doctorate after earning the M.A. degree by fulfilling the Type A requirements will be obliged to take again the Advanced German Test administered by the Educational Testing Service and to achieve a score satisfactory to the department.

2. To satisfy the foreign language requirement for the M.A. the student must complete, after admission to the Graduate Division, one upper division literature course (in which the readings are substantially in the foreign language) with a grade of B or better, or take a departmental examination, consisting of a passage in the target language of approximately 40 lines, which bear upon material known to have been covered in courses of instruction, to be translated in writing within one and a half hours, using a dictionary.

Courses taken to fulfill a foreign language requirement, or taken in preparation for absolving a foreign language requirement, will not be counted as part of a graduate student's academic course load.

3. One four-unit course in another department may, with the approval of the Graduate Adviser, be counted toward the degree if it has relevance to the student's special program.

4. The course in bibliography, or its equivalent, must be taken prior to, or concurrently with, other German graduate courses.

5. Every student must teach a minimum of two quarters in elementary German under supervision at some time before taking the M.A. degree.

6. Advanced German (German 101A-B) may not be counted toward the units required for the M.A.

Doctor of Philosophy—Germanic Languages and Literatures

Admission requirements and prerequisites

In addition to the general requirements of the Graduate Division, the applicant must satisfy the following departmental requirement:

All applicants for admission to our graduate program must take the Advanced German Test administered by the Educational Testing Service. The location of testing centers and dates when this test is offered may be determined by writing to Graduate Record Examinations, Educational Testing Service, Box 955, Princeton, New Jersey 08540. Results of the test must be available to us before a student's application can be considered complete.

Degree requirements

1. The student will follow a course of study leading to the M.A. degree but may not take more than 12 units of undergraduate work.

2. To satisfy the foreign language requirement for the Ph.D. the student must complete, after admission to the Graduate Division, one upper division literature course (in which the readings are substantially in the foreign language) with a grade of B or better, or take a departmental examination, consisting of a passage in the target lan-

guage of approximately 40 lines, which bear upon the candidate's major research interest, to be translated in writing within one and a half hours, using a dictionary. The student may substitute for the second foreign language a departmental examination based upon a reading list of world classics or complete course 3 of the regular sequence of a second foreign language with a grade of B or better, or place into course 4 on the language placement examination.

Courses taken to fulfill a foreign language requirement, or taken in preparation for absolving the foreign language requirement, will not be counted as part of a graduate student's academic course load.

3. After the satisfactory completion of the M.A. equivalent, the student will be advised from quarter to quarter which courses, in the adviser's opinion, are necessary in order for the student to be properly prepared for the doctoral qualifying examination.

4. The qualifying examination, which advances the student to candidacy, will consist of three written examinations, followed by an oral examination. The candidate will write: a) one examination of at least four hours on German philology and older German literature (from the beginnings to 1400), including the history of the German language and a substantive knowledge of either Gothic or Old High German; b) two examinations of at least four hours on major works and movements in German literature after 1400. The examination in German philology and older literature (a) will be scheduled at least one month prior to the two examinations dealing with post—1400 literature (b).

5. Upon passing the qualifying examination, the student will be advanced to candidacy. A dissertation then must be written and defended in an oral examination.

6. Every student must teach a minimum of three quarters in elementary or intermediate German under supervision at some time before taking the Ph.D. degree.

Career opportunities

An undergraduate major in languages and literatures is not primarily intended to provide a student with a vocation. It provides a sound liberal arts education. The department has available a library on career opportunities, but in general students should note: The major in Literature is intended for those students who are devoted to liberal arts and wish to prepare for graduate school in literature or library science; or who wish to enter professional schools in law, medicine, or other graduate studies. The major in Language and Civilization is more oriented toward practical goals and practical *use* of the language. Future secondary school teachers, aspirants for the Translator-Interpreter Program, or students interested in political and business careers will find the Language and Civilization major more suited to their needs.

Teaching credentials

A bachelor's degree in *Germanic & Slavic Lang.* is an acceptable major for entry into a Single Subject (secondary) or Multiple Subject (elementary) Credential Program. Students completing this degree, who plan to teach at the secondary level in California, should apply to the Single Subject Credential Program in the area of *Foreign Lan-*

guages. The State of California requires that credential candidates demonstrate their subject matter competency in this teaching area. Subject matter competency can be established in one of two ways: either by passing the National Teachers Examination in this teaching area *or* by completing a State approved program. (The approved program consists of selected course work included in the degree program.) Students should consult with department advisors, or advisors in the Graduate School of Education about courses which, when completed, eliminate the need for taking the National Teachers Examination.

Students who wish to pursue a Multiple Subject (elementary) Teaching Credential are advised that the State of California requires that students complete either a Liberal Studies program (see details in section J of the catalogue), or pass the National Teachers Examination (Common Examination). It is quite feasible for students to complete a degree major and to simultaneously fulfill the requirements for the Liberal Studies program.

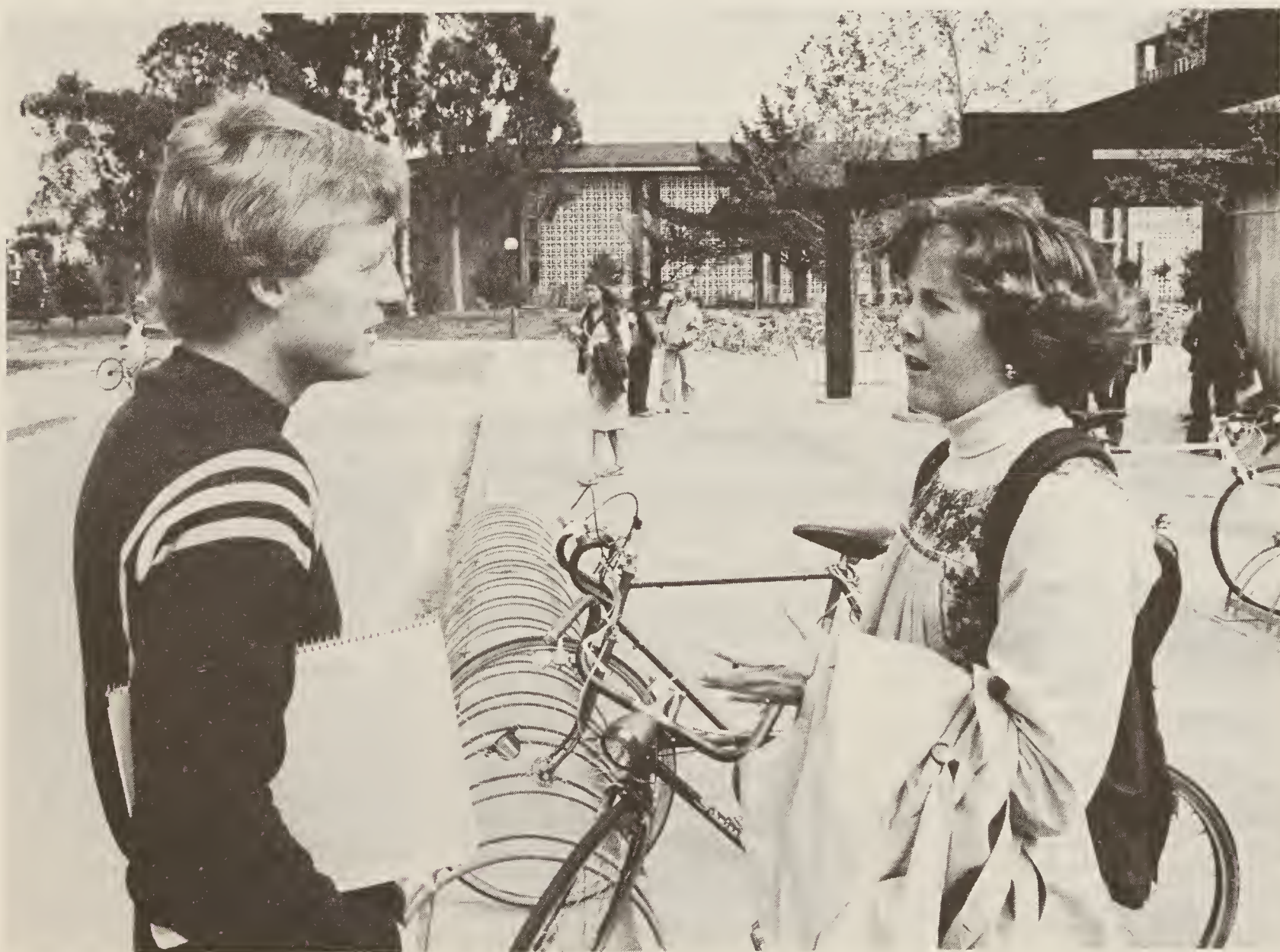
Admission to credential programs at UCSB also requires certain prerequisites. The following chart identifies these requirements.

	English 106	Ergonomics 109	Mathematics 100 A & B	Pre-Professional Experience
Multiple Subject Program	X	X	X	X
Single Subject Program	X	X		X

Certain majors may require students contemplating a teaching career to complete specified courses within the major. These course requirements should be satisfied within the bachelor's degree program and prior to formal admission to the credential program. Contact the designated adviser in German or Russian for specific requirements. Proficiency in language fluency must be demonstrated before student teaching begins.

Correspondence information

Department of Germanic and Slavic Languages, Phelps Hall, Rm. 6206, University of California, Santa Barbara, California 93106 Phone: (805) 961-2131.



UPPER DIVISION OFFERINGS IN GERMAN BY SUBJECT

(For course descriptions, see offerings in German by course number.)

GROUP I - Upper Division Literature in Translation Courses

All courses in this group are given in English and all texts are in English translation. Open to undergraduate and graduate students. Only 8 units may be applied to the major in German.

- 147 • German Immigration
- 160D • Expressionism in the Film, in Art and the Theater
- 161 • Classicism and Romanticism in German Literature
- 162 • Kafka, Mann and their Age
- 163 • Marxism and its Aftermath
- 164A—I • Great German Writers
- 167A • Martin Luther and His Time
- 168 • The Faust Tradition
- 172 • Hermann Hesse
- 172S • Proseminar on Hesse
- 173 • Epic Theater and Recent Trends in Drama
- 174 • Literature and Psychology in the 19th and 20th Century
- 175 • Genius and Madness in Literature
- 187 • Strauss and Hofmannsthal

GROUP II (*Prerequisites for A & B: unless otherwise stated, six lower division language courses [24 units] or their equivalent.*)

A: Upper Division Language and Linguistics Courses

Offerings in German by Course Number

Lower Division courses

1 • Elementary German (4) Staff

1G • Introduction to Reading German (For Graduate Students) (3) Staff

Prerequisite: Graduate Standing in any field.

The course offers a brief introduction to the essentials of German grammar with emphasis on such aspects of structure that are indispensable for reading skills (while deemphasizing those that are not). Reading texts are included from the beginning. It is offered in the Winter of each year as the first part of the sequence 2G and German 400. (Passed/Not Passed Only)

2 • Elementary German (4) Staff

Continuation of 1.

2G • Introduction to Reading German (For Graduate Students) (3) Staff

Prerequisite: Graduate Standing in any field; completion of German 1G or equivalent.

The course is a continuation of German 1G, using the same approach, with reading texts on a somewhat more complex level. It is offered in the Spring quarter. (Passed/Not Passed Only)

3 • Elementary German (4) Staff

Continuation of 2.

4 • Intermediate German (4) Staff [D]

Continuation of 3.

5 • Intermediate German (4) Staff [D]

Continuation of 4.

6 • Intermediate German (4) Staff [D]

Continuation of 5.

8A—B—C • German Conversation (2-2-2) Staff

Prerequisite: German 3 or equivalent prerequisite to A, German 4 or 8A prerequisite to B, German 5 or 8B prerequisite to C.

Conversation course conducted entirely in German. Meets two hours per week.

14 • Individualized Instruction (1-24) Staff

Equivalent to elementary and intermediate courses 1—6. Course consists of 24 sequential instructional units. Successful completion of each unit earns the student one unit of credit and permits him to continue, if he so wishes, to the following unit. Each student progresses at his own rate of speed. Units of credit and grades are calculated on the basis of instruction units completed. At least one unit must be completed no later than the last day for undergraduates to drop

(required courses are starred)

- 101A*-B*-C* • Advanced German (any two)
- 102A-B-C • Advanced German Conversation
- 103 • Phonetics and Phonology
- 110A-B-C • Stylistics
- 120* • History of the German Language

B: Upper Division Required Literature Courses in either Literature or Civilization Majors

- 100 • Introduction to the Study of German Literature
- 107A-B • Cultural History of German Speaking Countries
- 115A-B-C • Survey of German Literature

GROUP III - Upper Division Major Elective Literature Courses

Prerequisite: As in Group II.

- 126 • Lessing and the Enlightenment
- 127A-B • Goethe
- 128 • Goethe's Faust
- 130 • Schiller
- 142 • The Novella: The 19th Century
- 146 • Nineteenth Century Lyrics
- 148 • Nineteenth Century Drama
- 151 • Twentieth Century Prose
- 153 • Studies in Twentieth Century German Literature
- 155 • Twentieth Century Drama
- 157 • Twentieth Century Lyrics

a course, or a grade of F for one unit will be recorded (no Incompletes allowed).

14M • Individualized Instruction (1-12) Staff

Equivalent to elementary courses 1-3. Course consists of 12 sequential instructional units. Successful completion of each unit earns the student one unit of credit and permits him to continue, if he so wishes, to the following unit. Each student progresses at his own rate of speed. Units of credit and grades are calculated on the basis of instruction units completed. At least one unit must be completed no later than the last day for undergraduates to drop a course, or a grade of F for one unit will be recorded (no Incompletes allowed). (Summer Session Only)

30 • German Play Reading (4) Staff [D]

Prerequisite: German 3 or consent of instructor.

Reading of 5 German plays. Reader's Theatre approach. Assignment of Roles Emphasis on verbalization in German and interpretation. Reference texts in English will be provided. Individual coaching will be available. Audio-video taping of last play. Some discussion and notes.

Upper Division courses

German majors please note that no more than eight units of German courses taught in English may be counted toward the major.

100 • Introduction to the Study of German Literature (2) Staff*Prerequisite: German 6 or equivalent*

Application of the techniques and methods used in literary criticism. The major tools of the study of literature. Texts used for analysis will vary upon the discretion of the instructor but will include prose, poetry, and drama. (Required for all German literature majors.)

101A • Advanced German (4) Staff [D]*Prerequisite: German 6 or equivalent*

An intensive reading course using advanced texts, mostly literary, to improve reading skills through a structural approach. (The course may be taken simultaneously with or after German 101B or 101C. Projected reading selections correspond to those assigned for German 115A.)

101B • Advanced German (4) Staff [D]*Prerequisite: German 6 or equivalent*

A course in advanced structure of German aimed at improving oral and written expression as useful skills. Oral comprehension is also emphasized. (The course may be taken simultaneously with 101A.)

101C • Advanced German (4) Staff [D]*Prerequisite: German 101B or equivalent*

A course in advanced structure of German aimed at improving oral and written expression as useful skills. Oral comprehension is also emphasized. (The course may be taken simultaneously with 101A.)

102A—B—C • Advanced German Conversation (2-2-2) Barraclough*Prerequisite: German 6 or equivalent.* This course does not satisfy unit requirements for the major.**103 • Phonetics and Phonology** (2) Gottschalk*Prerequisite: German 6 or equivalent*

Study of the articulatory basis of the sounds of German standard pronunciation, and a comparison with the English. (German 103 is strongly recommended before German 120.)

107A—B • History & Culture of German Speaking Countries (4-4) Staff [D]

Prerequisite: Upper Division Standing. **A:** A study of German culture and the history of ideas from the middle ages to the 18th century. **B:** A study of the German history of ideas, the arts and institutions from the French Revolution to the present. The contemporary political, cultural, and social situation in the German-speaking countries.

110A—B—C • Stylistics (4-4-4) Gottschalk, Konrad [D]*A is prerequisite to B.*

A course in advanced composition, stressing refinements of idiom and style.

112A • The Language of Business (4) Gottschalk, Konrad [D]

The course deals with specialized forms of present day German with particular attention devoted to traditional, new, and just emerging terminology, to syntax, style, and usage as distinct from the everyday language.

112B • The Language of Contracts and Law (4) Gottschalk, Konrad [D]

The course deals with specialized forms of

present day German with particular attention devoted to traditional, new, and just emerging terminology, to syntax, style, and usage as distinct from the everyday language.

112C • The Language of the Newsmedia (4) Gottschalk, Konrad [D]

The course deals with specialized forms of present day German with particular attention devoted to traditional, new, and just emerging terminology, to syntax, style, and usage as distinct from the everyday language.

115A—B—C • Survey of German Literature (4-4-4) [D]

Prerequisite: German 6 or equivalent. Students should take 115A—B—C concurrently with 101A—B. **A:** Survey of the Literary Movements of the 20th Century, Exner, Mahlendorf; **B:** Survey of the Literature of Classicism and Romanticism, Atkins, Gottschalk, Hoffmeister; **C:** Survey of the Literary Movements of the 19th Century, Exner, Hoffmeister, Mahlendorf.

120 • History of the German Language (4) Gottschalk, Waterman [D]

A history of the language from its Germanic origins to modern times with special reference to the cultural and social forces that shaped the standard literary language.

126 • Lessing and the Enlightenment (4) Atkins, Hoffmeister [D]

Studies in the literature of the German Enlightenment with the main emphasis on theoretical and dramatic works of Lessing.

127A—B • Goethe (4-4) Atkins, Hoffmeister [D]*Prerequisite: A is normally prerequisite to B.*

Goethe's life and major works with the exception of *Faust*, emphasizing his literary and intellectual achievement.

128 • Goethe's Faust (4) Atkins, Exner, Mahlendorf [D]**130 • Schiller** (4) Atkins [D]

A survey of Schiller's development as illustrated in selected poems, dramas, and essays.

142 • The Novella: The Nineteenth Century (4) Exner, Hoffmeister [D]

Shorter prose works by authors from Romanticism to Naturalism.

146 • Nineteenth Century Lyrics (4) Atkins, Exner, Hoffmeister [D]

Major poets and poetic movements after Goethe's death and Romanticism. Poets of the "Young Germany" movement, of Poetic Realism, and Naturalism. Attention to questions of prosody.

147 • German Immigration into the USA (4) Hoffmeister [E2]

Studies the plight of the German farmers, craftsmen and intellectuals in the old country from the 18th to the 20th century which led to waves of emigration; the American dream; the patterns of settlement from East to West; the successes, integration and the contributions of German speaking settlers, immigrants, and exiles over the last two centuries.

148 • Nineteenth Century Drama (Kleist to Hauptmann) (4) Staff [D]

The German drama from Kleist to Hauptmann.

151 • Twentieth Century Prose (4) Exner, Mahlendorf [D]

Beginning with Expressionism, studies of the development of German prose in our century. Particular emphasis on the two most recent decades.

153 • Studies in Twentieth Century German Literature (4) Exner, Gottschalk, Mahlendorf [D]

One or more major figures will be studied in each quarter. Thomas Mann, Rilke, Kafka, Brecht, Hesse, Hofmannstahl, Böll. May be repeated for a total of 20 units.

155 • Twentieth Century Drama (Post Naturalism) (4) Mahlendorf [D]

Theory, characteristics and practices of Expressionist drama, epic theater, theater of the absurd, theater of cruelty and post-epic theater. The dramatic work of such authors as the following will be discussed: Wedekind, Kaiser, Sternheim, Toller, Brecht, Dürrenmatt, Frisch, Weiss, Grass.

157 • Twentieth Century Lyrics (4) Atkins, Exner, Mahlendorf [D]

Major developments in lyric poetry, beginning with Expressionism; emphasis on post-World War II poets and their work.

160D • Expressionism in the Film, in Art and the Theater (4) Mahlendorf and Walker*Prerequisite: Upper Division Standing*

Treating the social theory, aesthetic and artistic techniques, of Expressionism in art, literature and film. Readings and lectures in English. Same course as Art 160D.

161 • Classicism and Romanticism in German Literature (4) Gottschalk, Hoffmeister [D]

Selected readings in English translation from the classicists, romanticists, and realists of the 18th and 19th centuries.

162 • Kafka, Mann and their Age (4) Exner, Gottschalk, Mahlendorf [D]

Selected readings in English translation from German literature of the turn of the century to 1933, including such authors as Nietzsche, Mann, Kafka, Rilke, Brecht.

163 • Nazism and its Aftermath (4) Mahlendorf [D]

Selected readings in English translation from contemporary German literature, including such authors as Grass, Dürrenmatt, Frisch, Weiss, Böll, etc.

164A—I • Great German Writers (4) Exner, Gottschalk, Mahlendorf [D]

One or more major figure will be studied in each quarter from the following: A. Böll, B. Kleist & Büchner, C. Goethe, D. Thomas Mann, E. Kafka, F. Heine. Readings and lectures in English.

167 • Martin Luther and His Time (4) Hoffmeister [D]

Study of the religious revolution in Germany using the Italian Renaissance as a point of reference and placing the Reformation into the socio-

economical context of humanistic and anti-humanistic forces. European masterpieces from Castiglione via the Bible to the History of Dr Faustus. Conducted in English.

168 • The Faust Tradition (4) Exner, Mahlendorf [D]

The Faust legend in literature. Emphasis on the Chapbook, Marlowe, Goethe, and Thomas Mann. Readings and lectures are in English.

172 • Hermann Hesse (4) Gottschalk [D]
Introduction to Hesse, the man and the artist. Study of the themes and structures of selected prose works ranging from his beginnings as a writer to his receipt of the Nobel Prize. No knowledge of German required.

172S • Proseminar on Hesse (4) Gottschalk [D]

Prerequisite: German 172 or equivalent. *Permission of instructor*

Detailed analysis of Hesse's late prose; comparative studies; papers. Taught in English.

173 • Epic Theater and Recent Trends in Drama (4) Mahlendorf [D]

The German theater today: plays, playwrights, and theatrical movements from the 19th century to Post World War II. Readings and lectures are in English.

174 • Literature and Psychology in the 19th and 20th Century (4) Mahlendorf [D]

A study of selected 19th and 20th century authors and their works from a depth-psychological perspective; e.g., Goethe, Schiller, Kleist, Mann, Hesse, Kafka, Brecht, Grass, Frisch. Lectures and readings in English.

175 • Genius and Madness in Literature (4) Mahlendorf [D]

The treatment of creativity by German romantic and twentieth century writers. Their theories of madness and of inspiration, their description of unusual states of consciousness, of risk and suicide. Readings by such authors as E.T.A. Hoffmann, Kleist, Mann and Grass.

187 • Strauss and Hofmannsthal (4) Exner and Hsu

The collaboration between composer and poet. A study of their correspondence and of the operas, with special emphasis on *Electra*, *Rosenkavalier* and *Ariadne*. Same course as Music 187.

190 • Special Topics in German (1-4) Staff

To be taken with the consent of the instructor and the departmental chairman by students who have completed the German courses regularly offered, or the equivalent, in order to go on with further, more advanced study, according to their needs and interest.

***198 • Readings in German** (1-5) Staff

Prerequisite: Upper Division standing.
May not be repeated.

***199 • Independent Studies in German** (1-5) Staff

Prerequisite: Upper Division Standing.

*See N2 for 198/199 independent studies unit limitations

Individual investigations in literary fields.

199 courses are limited to five units in one quarter and 12 units total.

Graduate courses

German 201 is a prerequisite for all graduate courses and should therefore be taken during the first year of graduate studies.

201A—B • Bibliography and Methods of Criticism (2-2) Staff **A:** Introduction to bibliographical and other research aids, with exercises. (*S/U grading*) **B:** Introductory survey of major critical methods and literary theories. (*Letter grade*)

202A—B • Gothic (4-4) Waterman **A:** Descriptive analysis of Ulfian Gothic; translation of selections from Gothic Bible. **B:** Historical study of Gothic phonology and morphology; linguistic analysis of Gothic texts.

203A—B • Middle High German Literature (4-4) Staff **A:** Survey of grammar; reading of simple texts. **B:** Reading literary analysis of representative lyric and epic poems. May be repeated for a maximum of 16 units credit.

204A—B • Old High German (4-4) Waterman Phonology, morphology, and syntax, grammatical analysis and translation of selected texts.

205 • 18th Century Linguistic Theory (4) Waterman

A survey of language theories which resulted in the first grammars devoted to contemporary English, French, and German. Taught in English.

207 • Renaissance and Reformation (4) Atkins, Hoffmeister

Studies in the Italian and northern origins of the Renaissance and its transformation through Luther's Reformation; major writers in the vernacular from Ackermann to Dr. Faustus.

208A—B—C • Seminar on Seventeenth Century Literature (4-4-4) Hoffmeister

Theory, European influences, and literary practices of the Baroque poets either in prose works, lyrics or the drama.

209 • Seminar on Eighteenth Century Literature (4) Atkins, Hoffmeister

Studies in the intellectual and literary-historical background, with particular reference to influences from and parallel developments in England and France. The major writers treated will be Lessing and his contemporaries.

210 • Seminar in Literary Theory and Criticism (4) Atkins

An introduction to methods of literary investigation and their theoretical bases with practical application to specific literary texts and literary-historical topics.

215 • Seminar in Old High German (4) Waterman

Prerequisite: 204A—B

Intensive study of a major Old High German document; introduction to paleography, prepara-

tion of critical editions; dialectology and lexicography.

220 • History of the German Language (4) Waterman

Prerequisite: German 120 or equivalent.

German in its Indo-European setting, from its historical beginnings with emphasis upon the development of a standardized *Schriftsprache* in the sixteenth century.

222 • Seminar in Germanic Linguistics (4) Waterman

The development of the Germanic languages from Proto-Indo-European through Proto-Germanic and into early Germanic dialects as established by the techniques of historical linguistics.

225 • Seminar in the History of German Grammar (4) Waterman

Early grammars of German; grammarians and grammars of the 17th and 18th centuries, with special attention to Schottel, Gottsched, and Adelung; new directions in 20th-century German Grammar.

226A—E • Studies in the Age of Goethe (4) Atkins, Hoffmeister

Studies with special emphasis on one of the following: **A:** Sturm and Drang, **B:** Kleist, **C:** Hölderlin, **D:** the Schlegels, **E:** the Romantic Novel. May be repeated for a maximum of 20 units.

227A—B • Goethe (4-4) Atkins **A:** Reading and interpretation of works representative of one major period or aspect of Goethe's literary development. **B:** Individual investigations of specialized topics related to materials treated in A.

228 • Schiller (4) Atkins

Lectures and discussions of specific topics chosen from Schiller's plays and esthetic writings. Students present extensive oral reports.

229 • Seminar on Schiller (4) Staff

Introductory lecture; reading and discussion of some of Schiller's writings from a specific point of view. Extensive use of secondary sources. Students present oral reports and furnish a major paper based on their specific investigations.

230A—B • The Romantic Movement (4-4)

Atkins, Hoffmeister **A:** Early German Romanticism, with emphasis on theoretical premises and their literary expression. **B:** Romantic writing in the period of political nationalism and Restoration. Oral or written reports and examinations in both A and B.

231 • Seminar on Romanticism (4) Atkins, Exner

The special study of a topic chosen from, or related to, material covered in German 230A or 230B. Emphasis on recent developments in the investigation and theory of German romanticism.

232A—K • Studies in Nineteenth Century Literature and Thought (4) Exner, Gottschalk

Studies in nineteenth century literature and thought with special emphasis on one of the following major writers: **A:** Heine, **B:** Büchner, **C:** Stifter, **D:** Hebbel, **E:** Grillparzer, **F:** Keller, **G:** Meyer, **H:** Raabe, **I:** Fontane, **J:** Nietzsche, **K:** Schopenhauer. May be repeated for a maximum of 36 units

235A—J • Studies in Twentieth Century Literature (4) Exner, Gottschalk, Mahlendorf
Studies in twentieth century literature with special emphasis on one of the following major writers: **A:** Hauptmann, **B:** Mann, **C:** Rilke, **D:** Hofmannsthal, **E:** Kafka, **F:** Brecht, **G:** Benn, **H:** Expressionism, **I:** Hofmannsthal and the tragic, **J:** Hesse. May be repeated for a maximum of 36 units.

236 • Contemporary Literature (4) Exner, Mahlendorf, Gottschalk
Intensive study of particular authors, genres, literary movements, and selected topics in German Literature after World War II.

240A—G • Studies in the Main Literary Genres (4) Exner, Hoffmeister, Mahlendorf
Studies in the main literary genres: **A:** Lyric, **B:** Drama, **C:** Novella, **D:** Novel, **E:** Essay, **F:** Tragedy and the tragic element, **G:** Comedy. This course may be repeated for a maximum of 24 units.

297 • Laboratory for Teaching Assistants (2-4) Barraclough, Konrad

Subject oriented, designed to relate directly to the teaching of a particular course in progress, to improve the skills and effectiveness of the department's teaching assistants. Units earned in this course, which is required of all teaching assistants, do not apply toward completion of the M.A. or Ph.D. requirement.

596AA—ZZ • Directed Reading and Research (2-4) Staff

Individual tutorial. A written proposal for each tutorial must be approved by Department Chairman and filed with Graduate Division. Letter grade. Minimum of two units per quarter. No more than half the units necessary for the master's degree may be taken in 596.

597 • Individual Study for Master's Comprehensive Examinations and Ph.D. Examinations (1-12) Staff

Maximum of 12 units per quarter. S/U grade. Instructor should normally be the student's major professor or chairman of his doctoral committee. No unit credit allowed toward advanced degree(s). Enrollment limited to 24 units per examination.

599AA—ZZ • Dissertation Preparation (2-6) Staff

Only for preparation of the dissertation. Instructor should be the chairman of the student's doctoral committee. S/U grade. Maximum of 12 units total.

Related courses in Education

Education SG 390 • Curriculum, Instructional Procedures and Materials Used in the Teaching of German (3-5) Staff

Teaching German language and literature on the high school and college levels. Presentation and content of linguistic and literary courses. A professional course in methods.

Education SG 392 • Student Teaching: German (3-6) Staff

Required of candidates for a teaching credential with a major or minor in German. S/U grading. May be repeated.

Education SG 393 • Problems Seminar: Teaching German (1) Konrad

Prerequisite: Taken concurrently with SG392, *Student Teaching*.

Discussion of problems in the teaching of German.

German Translator-Interpreter Program courses

(All courses graded "Satisfactory"/"Unsatisfactory")

400 • Reading of Specialized German Texts (3) Konrad

Prerequisites: For beginners in the Translator-Interpreter Program in German/English and other eligible graduate students from other departments.

Reading comprehension is practiced through rendition of specialized texts (i.e., texts in the areas of the students' specialization) into English. The course represents a sequence to German 2G and may be taken as preparation for Ph.D. reading tests in German. (May be repeated).

402 • Oral Comprehension: Exercises in Summarizing or Translating Taped Texts (German to English) (3) Konrad

An introductory course for translating and interpreting. Tutorial. The text selections are literary at first, technical later. Language Laboratory assignments (two hours of lab assignments to one hour of class). Prerequisite for any further courses in interpretation. (May be repeated)

403 • Introduction to Consecutive Interpretation (3) Konrad

Prerequisite: German 402, *Oral Comprehension*, or equivalent.

Workshop. Additional lab work. Consecutive interpretation of dialogues graded for difficulty. Some preparatory topical reading required. (May be repeated)

404 • Introduction to Translation (3) Konrad

Fundamental problems of translation demonstrated by typical sentences. Varied topics. Textbook: *Technik des Übersetzens* by Wolf Friederich. Written assignments. (May be repeated)

405 • Consecutive Interpretation (3) Konrad

Prerequisite: German 403, *Introduction to Consecutive Interpretation*, or equivalent.

Interpretation of dialogues and speeches into English, simulated conferences and laboratory exercises. (May be repeated)

406 • Translation of General and Technical German Texts into English (Intermediate) (3) Konrad

Prerequisite: German 404 *Introduction to Translation*, or equivalent.

Course conducted with teaching aids in the Language Laboratory; one weekly class meeting. Texts selected individually in student's specialty. Written assignments. (May be repeated)

408 • Writing and Translation of Business Materials (3) Konrad

Special emphasis on business terminology. Written assignments. Includes required reading in German in the field of business. (May be repeated)

410 • Summarizing of Specialized German Texts in English (3) Konrad

Prerequisites: German 402, *Oral Comprehension*, German 404, *Introduction to Translation*, or equivalent.

Written assignments. (May be repeated)

412 • Translation of Specialized Texts from German into English. Advanced Level (3) Konrad

Prerequisites: German 406, *Translation of general and technical German Texts*, or equivalent.

Written assignments. (May be repeated)

414 • Translation of General or Specialized Texts into German (3) Konrad

Prerequisites: German 412, *Translation of Specialized Texts from German into English*, or equivalent.

Written assignments.

Russian Lower Division courses

1 • Elementary Russian (4) Kostruba, Granoien

1S • Introduction to Reading Russian (4) Kostruba

Russian course tailored to individual needs of students: **A:** Reading and writing Russian for graduate students. **B:** Russian grammar, with emphasis on reading and writing for beginners. **C:** Preparation to enter advanced course in Russian for those with previous knowledge (including high school students)

2 • Elementary Russian (4) Kostruba, Granoien
Continuation of 1.

3 • Elementary Russian (4) Kostruba, Granoien
Continuation of 2.

4 • Intermediate Russian (4) Kostruba, Granoien [D]
Continuation of 3.

5 • Intermediate Russian (4) Kostruba, Granoien [D]
Continuation of 4.

6 • Intermediate Russian (4) Kostruba, Granoien [D]
Continuation of 5.

8A—B—C • Conversation and Composition (2-2-2) Kostruba, Granoien
Prerequisite: Russian 1 and 2.

Practice in speaking and writing Russian. Conversation, discussion and composition on assigned topics. To be taken concurrently with Russian 3, 4, 5 or 6.

11A—B • Russian for Graduate Students (4-4) Staff

The first quarter will present the elements of Russian grammar and word formation using short illustrative prose selections. The second quarter will complete the presentation of grammar and practice techniques of translating more specialized texts.

33 • Russia—From Yesteryear to the Present (4) Kostruba [E-2]

Survey of geographical, historical, ethnological, political and literary background of the largest country in the world with emphasis on the milestones in each of the above-mentioned fields. Lectures in English; some slides and films. Five quizzes and a non-essay final examination. *Summer Session Only.*

Upper Division courses**101A—B—C • Advanced Russian: Third Year** (4-4-4) Staff [D]

Prerequisite: Russian 6 or consent of instructor.
Introduction to extensive reading of Russian prose with discussion and composition in Russian.

102 • Russian Composition (4) Staff [D]

Prerequisite: Russian 6 or consent of instructor.
Designed to help develop writing skills in Russian. May be repeated once.

103 • Chekhov's Short Stories (4) Staff [D]

Prerequisite: Russian 6 or consent of instructor.
Reading and analysis of a sampling of works from Chekhov's various periods. Reading, discussion and composition in Russian.

105 • Pushkin (4) Kaspin [D]

Prerequisite: Russian 6 or consent of instructor.
Reading of important works in the original; discussion and composition. Conducted in Russian.

107 • The Russian Nabokov (4) Johnson [D]

Prerequisite: Russian 5 or consent of instructor.
A study of Nabokov's Russian writings with primary focus on the short stories, poetry and plays.

108 • The Russian Language: Morphology (4) Johnson [D]

Prerequisite: Russian 6 or consent of instructor.
A study of Russian word formation. Primary focus is on the verb system.

115A • Russian through the 19th Century (4) Staff [D]

Begins with the medieval period, traces the development of Russian literature through classicism and romanticism and into the age of realism to mid-nineteenth century. Reading and discussion in English or works by Pushkin, Lermontov, Gogol, Turgenyev, and others.

115B • Russian Literature through the 19th century (4) Staff [D]

The Russian novel and afterward: a discussion of literature and thought in the second half of the nineteenth century. Works by Dostoevsky, Chekhov and others. Readings and lectures in English.

120 • Russian Drama (4) Kaspin [D]

Plays from the classic, romantic and realistic periods, Chekhov's innovative works, as well as dramas representative of various trends before and after 1917. Readings and discussion in English.

121 • The Russian Short Story (4) Staff [D]

Prerequisite: Russian 6 or consent of instructor.

Analysis and discussion of various forms of the short story by Russian writers. May be repeated for eight units total.

122 • The Russian Novella (4) Kaspin [D]

Prerequisite: Russian 6 or consent of instructor.
In Russian literature the novella is a genre quite distinct from the short story and the novel. All major writers of the 19th and 20th centuries created important works in this form, so that a vast field for exploration and examination exists for such a genre course. May be repeated for eight units total.

123 • Russian Poetry of the Golden Age (4) Kostruba [D]

Prerequisite: Russian 6 or consent of instructor.
A study of representative works of the major nineteenth century poets (e.g., Pushkin, Lermontov, Tyutchev, Fet, Nekrasov), with attention to each work's relationship to the history of the development of Russian poetry generally and its place in the author's career. All work to be done in Russian.

125 • Twentieth Century Russian Literature (4) Staff [D]

Avant-garde experimentation before and immediately following the Revolution, Stalin's "socialist realism," the brief "thaw" of the Krushchev years and literature of dissent. Works by Mayakovsky, Pilnyak, Pasternak and Solzhenitsyn, among others. Lectures and readings in English.

127 • The Silver Age (4) Staff [D]

Poetry, prose and drama of the Decadents, Symbolists and post-Symbolists. The aesthetic and ethical ideals of the generation following the critical realists. Works by Briusov, Balmont, Blok, Bely, Kuzmin, Akhmatova, Mandelstam and others. Lectures and readings in English.

130 • Dostoevsky (4) Kaspin [D]

Prerequisite: Upper Division standing.
A study of Dostoevsky's principal novels and short stories in their historical and cultural contexts. Lectures and readings in English.

131 • Tolstoy (4) Kaspin [D]

A study of Tolstoy and his major novels and important shorter fiction. Lectures and readings are in English.

133 • Chekhov (4) Kaspin [D]

A study of Chekhov's development as a writer. Analysis and discussion of his shorter stories, long stories, and plays. Lectures and readings in English.

134 • Nabokov (4) Johnson [D]

A study of Nabokov's principal writings with particular attention to their Russian background. Lectures and readings in English.

140 • Problems in Translation (4) Kaspin [D]

Prerequisite: Russian 6 or consent of instructor.
Techniques of translating literary materials, both from English into Russian and from Russian into English.

150 • Russian Folk Literature (4) Kaspin [D]

The myths, epics, folk tales, folk lyrics, and other oral forms. Lectures and readings in English.

161 • Writings of Russian Dissidents (4) Staff [D]

Survey and analysis of the literary and polemical writings of dissenters in Russia, with emphasis on the most recent period. Genres include prose, poetry, memoir and essay by Tolstoy, Zamyatiu, Brodsky, Solzhenitsyn, Amalrik and others.

194 • Group Studies for Advanced Students (1-4) Staff

Prerequisites: Upper division standing; consent of the instructor and the department chairman.
Designed to meet special curricular problems. May be repeated but only four units may count toward the major. Enrollment limited to twelve students or less.

197 • Senior Thesis in Russian (4) Staff

Prerequisites: Senior Standing; 3.0 grade-point average.

Selected seniors may pursue individual projects with close tutorial supervision of faculty advisers. The reading and a substantial essay to be in Russian.

***198 • Readings in Russian** (1-5) Staff

Prerequisite: Senior standing.
Guided reading on a subject not covered in the regularly offered courses. May be repeated up to 6 units.

***199 • Independent Studies in Russian** (1-5) Staff

199 Courses are limited to five units in one quarter and 12 units total.

Graduate courses**596 • Directed Reading and Research** (2-4) Staff

Individual tutorial. A written proposal for each tutorial must be approved by Department Chairman and filed with Graduate Division. Letter grade. Minimum of two units per quarter.

Swedish**Lower Division courses****1 • Elementary Swedish** (4) Lundell

Beginner's course offered in the Fall quarter only.

2 • Elementary Swedish (4) Lundell

Continuation of 1.

3 • Elementary Swedish (4) Lundell

Continuation of 2.

8A—B—C • Swedish Conversation (2-2-2) Staff

Prerequisite: Swedish 3 or consent of instructor.
The course is based on audio-visual material and emphasizes conversation with some review of grammar and exercises in writing skills.

194 • Group Studies (1-4) Lundell

Prerequisite: Swedish 3 or equivalent.
Designed to meet special curricular problems. May be repeated, but only for a total of 6 units.

*See N2 for 198/199 independent studies unit limitations.

***198 • Readings in Swedish** (1-2) Lundell
Prerequisite: Upper Division standing

***199 • Independent Studies in Swedish** (1-5) Lundell
 199 courses are limited to five units in one quarter and 12 units total.
 Individual investigations in literary fields.

Scandinavian Upper Division courses

139A—B—C • Scandinavian Literature in Translation (4-4-4) Lundell [D]
A: Myth; **Tale**; **B:** Drama; **C:** Prose.

140 • Swedish Film (4) Lundell [C]
 Ingmar Bergman is the focal point for the course which also presents directors preceding the Bergman era and contemporary attempts to break away from the Bergman tradition. Readings and lectures are in English. (Film studies course.)

145 • Ingmar Bergman (4) Lundell [C]
 Study in depth of Swedish film director Ingmar Bergman.

150A—C • Great Scandinavian Writers (4) Lundell [D]
 One major figure will be studied each quarter from the following: **A.** Isak Dinesen, **B.** August Strindberg, **C.** Pär Lagerkvist. Readings and lectures are in English.

190 • Special Topics in Scandinavian (1-4) Lundell
 To be taken with the consent of the instructor and the departmental chairman by students who have completed the Scandinavian courses regularly offered, or the equivalent, in order to go on with further, more advanced study, according to their needs and interest.

Graduate courses

596 • Directed Reading and Research (2-12) Lundell
Prerequisite: Graduate standing only.
 Individual tutorial. A written proposal for each tutorial must be approved by Department Chairman and filed with Graduate Division. Letter grade. Minimum of 2 units per quarter. No more than half the units necessary for the master's degree may be taken in 596.

Foreign literature and film in English translation

(Literature courses for which no knowledge of a foreign language is required.)

147 • German Immigration (4) Hoffmeister [E2]
 Studies the plight of the German farmers, craftsmen and intellectuals in the old country from the 18th to the 20th century which led to waves of emigration; the American dream; the patterns of settlement from East to West; the successes, in-

tegration and the contributions of German speaking settlers, immigrants, and exiles over the last two centuries.

160D • Expressionism in the Film, in Art and the Theater (4) Mahlendorf and Walker
Prerequisite: Upper Division Standing
 Treating the social theory, aesthetic and artistic techniques of Expressionism in art, literature and film. Readings and lectures in English. Same course as Art 160D.

161 • Classicism and Romanticism in German Literature (4) Gottschalk, Hoffmeister [D]
 Selected readings in English translation from the classicists, romanticists, and realists of the 18th and 19th centuries.

162 • Kafka, Mann and their Age (4) Exner, Gottschalk, Mahlendorf [D]
 Selected readings in English translation from German literature of the turn of the century to 1933, including such authors as Nietzsche, Mann, Kafka, Rilke, Brecht.

163 • Nazism and its Aftermath (4) Mahlendorf [D]
 Selected readings in English translation from contemporary German literature, including such authors as Grass, Dürrenmatt, Frisch, Weiss, Böll, etc.

164A—I • Great German Writers (4) Exner, Gottschalk, Mahlendorf [D]
 One or more major figure will be studied in each quarter from the following: **A.** Böll, **B.** Kleist and Büchner, **C.** Goethe, **D.** Thomas Mann, **E.** Kafka, **F.** Heine. Readings and lectures in English.

167 • Martin Luther and His Time (4) Hoffmeister [D]
 Study of the religious revolution in German using the Italian Renaissance as a point of reference and placing the Reformation into the socio-economical context of humanistic and anti-humanistic forces. European masterpieces from Castiglione via the Bible to the History of Dr. Faustus.

168 • The Faust Tradition (4) Exner, Mahlendorf [D]
 The Faust legend in literature. Emphasis on the Chapbook, Marlowe, Goethe, and Thomas Mann. Readings and lectures are in English.

172 • Herman Hesse (4) Gottschalk [D]
 Introduction to Hesse, the man and the artist. Study of the themes and structures of selected prose works ranging from his beginnings as a writer to his receipt of the Nobel Prize. No knowledge of German required.

172S • Proseminar on Hesse (4) Gottschalk [D]
Prerequisite: German 172 or equivalent. Permission of instructor.
 Detailed analysis of Hesse's late prose; comparative studies; papers. Taught in English.

173 • Epic Theater and Recent Trends in Drama (4) Mahlendorf [D]
 The German theater today: plays, playwrights, and theatrical movements from the 19th century to Post World War II. Readings and lectures are in English.

174 • Literature and Psychology in the 19th and 20th Century (4) Mahlendorf [D]
 A study of selected 19th and 20th century authors and their works from a depth-psychological perspective; e.g., Goethe, Schiller, Kleist, Mann, Hesse, Kafka, Brecht, Grass, Frisch. Lectures and readings in English.

175 • Genius and Madness in Literature (4) Mahlendorf [D]
 The treatment of creativity by German romantic and twentieth century writers. Their theories of madness and of inspiration, their description of unusual states of consciousness, of risk and suicide. Readings by such authors as E.T.A. Hoffmann, Kleist, Mann and Grass.

187 • Strauss and Hofmannsthal (4) Exner and Hsu
 The collaboration between composer and poet. A study of their correspondence and of the operas, with special emphasis on *Electra*, *Rosenkavalier*, and *Ariadne*. Same course as Music 187.

Russian

115A—B • Survey of Russian Literature (4-4) Kaspin, [D]
 Reading and discussion in English of representative novels and short stories of Pushkin, Lermontov, Gogol, Turgenev, Goncharov, Dostoevsky, Tolstoy, Chekhov and others.

120 • Russian Drama (4) Kaspin [D]
 Russian drama in English translation.

125 • Twentieth Century Russian Literature (4) Staff [D]
 A survey of Russian literature from the early twentieth century.

127 • The Silver Age (4) Staff [D]
 Poetry, prose and drama of the Decadents, Symbolists and post-Symbolists. The aesthetic and ethical ideals of the generation following the critical realists. Works by Briusov, Balmont, Blok, Bely, Kuzmin, Akhmatova, Mandelstam and others. Lectures and readings in English.

130 • Dostoevsky (4) Kaspin [D]
 A study of Dostoevsky's principal novels and short stories in their historical and cultural contexts.

131 • Tolstoy (4) Kaspin [D]
 A study of Tolstoy's principal works in their historical and cultural contexts.

133 • Chekhov (4) Kaspin [D]
 Short stories and plays.

134 • Nabokov (4) Johnson [D]
 A study of Nabokov's principal writings with particular attention to their Russian background.

150 • Russian Folk Literature (4) Kaspin [D]
 The myths, epics, folk tales, folk lyrics, and other oral forms.

161 • Writings of Russian Dissidents (4) Staff [D]
 Survey and analysis of the literary and polemical writings of dissenters in Russia, with emphasis on the most recent period. Genres in-

*See N2 for 198/199 independent studies unit limitations

clude prose, poetry, memoir and essay by Tolstoy, Zamyatin, Brodsky, Solzhenitsyn, Amalrik and others.

Scandinavian

139A—B—C • Scandinavian Literature in Translation (4-4-4) Lundell [D]

A: Tale, Vision; **B:** Drama; **C:** Prose.

140 • Swedish Film (4) Lundell [C]

Ingmar Bergman is the focal point for the course which also presents directors preceding the Bergman era and contemporary attempts to break away from the Bergman tradition. Readings and lectures are in English (Film Studies course).

145 • Ingmar Bergman (4) Lundell [C]

Study in depth of Swedish film director Ingmar Bergman.

150A—C • Great Scandinavian Writers (4) Lundell [D]

One major figure will be studied each quarter from the following: A. Isak Dinesen, B. August Strindberg, C. Pär Lagerkvist. Readings and lectures are in English.

Hispanic Civilization

Committee in Charge

(See appropriate departmental entries for faculty information.)

Carlos García Barron, Ph.D., *Professor of Spanish*.

Manuel L. Carlos, Ph.D., *Associate Professor of Anthropology*.

Francis A. Dutra, Ph.D., *Associate Professor of History*.

Mario T. Garcia, Ph.D., *Associate Professor of History*.

Mireya Jaimes-Freyre, Ph.D., *Associate Professor of Spanish and Portuguese*.

Alejandro E. Planchart, Ph.D., *Professor of Music*.

David P. Rock, Ph.D., *Associate Professor of History* (Chairperson of the Committee).

Frederick G. Williams, Ph.D., *Associate Professor of Portuguese*.

Concerns of the program

This degree embraces the following geographical areas: Spain and Portugal, Latin America, the United States, Spanish or Portuguese-speaking countries elsewhere in the world. It is designed for students whose chief interests lie in these areas, who wish to pursue graduate work in these fields, or who are planning careers related to Spanish or Portuguese-speaking societies and cultures, for example in government, business, education, social services, journalism.

Departmental Advising and Requirements

The major requires a total forty units. Of these a minimum of twenty must be selected from the sequence of required courses listed below. The other twenty units may also be drawn from the required courses, or from the supplementary electives. The degree demands some knowledge of several different disciplines. However, there are wide opportunities for specialization. Students are strongly advised to make their course choices in consultation with the Chairperson, who will assist them in developing a balanced program of study which meets their specific interests.

Among the objectives of this major is to foster advanced skills in the Spanish and Portuguese languages. Good linguistic abilities can often play a critical part in students gaining employment on the completion of their studies.

There are strict language requirements for students wishing to enter the major.

Transfer credit in this major may be given to students who have undertaken studies in Spanish, Portuguese, or Latin American universities, according to University policy.

Options

Hispanic Civilization may be taken as part of a double major in combination with another discipline, such as, History, Anthropology, or Economics.

Students are encouraged to inquire into the feasibility of completing part of their degree through the University of California's *Education Abroad Program*, in Spain, Mexico, Brazil or Peru.

Bachelor of Arts

Preparation for the major

Students are required to complete *one* of the following:

Spanish 6. Intermediate Spanish (4) or equivalent* *or*

Portuguese 6. Reading Grammar and Composition (4) or equivalent* *or*

A written translation test from Spanish or Portuguese into English.

*Equivalents are defined as native-speaking knowledge of the language or credit in courses demanding a comparable level of proficiency taken elsewhere. In cases of doubt please consult with the Chairperson.

Upper Division major

A minimum of 40 units is required including at least one course from each of the following four categories (20 UD units):

1. Anthropology and Social Sciences.

Anthro 134-135 Modern Cultures of Latin America/Modern Mexican Culture (4-4).

Pol. Sci. 148 A-B Governments of Latin America (4-4).

Chic. St. 144 The Chicano Community (4).

Span. 119A-B Spanish Institutions and Culture (4-4).

Span. 177 A-B Spanish American Culture (4-4).

Port. 125 A-B Culture and Civilization of Portugal and Brazil (4-4).

2. Art History, Music and Film.

Art History 154 B-C Pre-Columbian Art of South America, Mexico and Central America (4-4).

Art History 161 C-D Art in Colonial Spanish America/ Hispanic American Music (4-4).

Music 116 A-B History and Literature of Hispanic American Music (4-4).

Span. 126, 127 Spanish Cinema; Latin American Cinema (4-4).

Port. 128 Luso-Brazilian Cinema (4).

Chic. St. 142 An Introduction to Chicano and Barrio Art (4).

3. History.

Hist. 108 A-B Comparative History of the Americas (4-4).

Hist. 150 A-B Spain and the Spanish Empire (4-4).

Hist. 151 A-B-C Latin American History (4-4-4).

Hist. 154A-B Portugal Overseas (4).

Hist. 155 A-B History of Portugal (4-4).

Hist. 156 A-B-Q History of Mexico (4-4-4).

Hist. 157 A-B History of Brazil (4-4).

Hist. 158 The Great Revolutions of Latin America (4).

Chic. St. 105 Twentieth Century Chicano History.

Chic. St. 168 A-B History of the Chicanos (4-4).

4. Literature

Span. 110 A-B-C Survey of Spanish Literature (4-4-4).

Span. 111 A-B-C Survey of Spanish American Literature (4-4-4).

Span. 115A-B Masterpieces of Spanish Literature in English Translation (4-4).

Span. 120 A-B Spanish American Literature in English Translation (4-4)

Span. 181-182 Hispanic Poetry from 1900 in English Translation (4-4).

Port. 105 A-B-C Survey of Portuguese Literature (4-4-4).

Port. 106 A-B-C Survey of Brazilian Literature (4-4-4).

Port. 115 Brazilian Literature in English Translation (4).

Port. 120 Portuguese Literature in English Translation (4).

Electives

The remaining 20 units may be chosen either from the 'Required Courses' above or from the following supplementary list. At least 16 of the 20 must be upper division.

Anthropology

112X Ethnology of Inequality (4).

130 Pre-history of South America (4).

130N Peruvian Prehistory (4).

133 Cultural Development of Meso-America (4).

137 The Ancient Maya (4).

148B Urbanization in Developing Societies (4).

190 Seminar of Political Anthropology of Latin America (4).

193 Problems in Meso-American Prehistory

Art History

161E Modern Mexican Painting (4).

163B Spanish Art: Renaissance and Modern (4).

Black Studies

133B Introduction to West Indian Literature (4).

Chicano Studies

115 Psychological Issues and the Chicano Child (4).

120 Bilingualism and the Chicano (4).

121 Writing Experiences for Bilinguals (4).

140 The Mexican Cultural Heritage of the Chicano (4).

150 The Evolving Chicana

164 Chicanos and the Administration of Justice (4).

170A Chicano Community Organizations (4).

174 Chicano Community Organizations (4).

181 The Chicano Novel (4).

188A-B Chicano Drama: Art and Life (4-4).

188C Chicano Dramatic Literature and Playwriting (4).

190 Introduction to Chicano Poetry and Short Story (4).

191AA-ZZ Special Topics in Chicano Studies (4).

Economics

114 Economic Development (4).

Environmental Studies

122 World Population and Food Supplies (4).

130A-B Third World: Environment and Prospects. (4-4).

History

150Q Special Studies in Spanish History (2).

153LP

157C Intellectual History of Brazil: Modern Period (4).

Medieval Studies

100 Aspects of Medieval Civilization (4).

Political Science

132 Latin America in World Affairs (4).

190L Latin American Workshop (2).

Portuguese

102A-B Advanced Grammar and Composition (4-4).

114 Literature of the Portuguese Expansion (4).

121 History of the Portuguese Language (4).

132A-B Luis de Camoes (4-4).

170 African Literature in Portuguese (4).

180 African Literature in Portuguese in English Translation

183A-Z Studies in Portuguese Literatures (4).

185 Brazilian Novels of the 20th Century. (4).

189 Brazilian Modernism (4).

Religious Studies

114A-B-C Introduction to Native American Religious Studies/Religious Traditions of the South-West/Myths, Symbols and Transitions in Native American Religions (4-4-4).

126 Roman Catholicism in Modern Times (4).

Sociology

123 Population (4).

125 Intercultural Studies in Community Milieu Abroad (4).

- 134 Social Movements (4).
- 144 The Chicano Community (4).
- 150 Principles of Social Welfare (4).
- 156 Current Issues in Demography (4).

Spanish

- 25 Advanced Spanish (4).
- 100 Introduction to Hispanic Linguistics (4).
- 101 American Spanish
- 102A-B Advanced Grammar and Composition (4-4).
- 102C Advanced Spanish for Communication: An intensive approach (4).
- 103 Spanish Pronunciation (4).
- 104 Standard Spanish (4).
- 105 Advanced Translation (4).
- 106 Cultures in Contact (4).
- 107 Languages in Contact (4).
- 108A-B-C Spanish-English. Contrastive Analysis (4).
- 109 The Spanish Language in the United States (4).
- 116 Juan Ruiz: The Book of Good Love (4).
- 117 Essayists of Spain and Spanish America.
- 121A-B History of Spanish and Portuguese Languages.
- 122A-B Medieval Spanish Literature (4-4).
- 123A-B Hispanic Balladry (4-4).
- 124A-B Theory and Analysis of Literature (4-4).
- 131A-B Golden Age Poetry (4-4).
- 134 Golden Age Novel (4).
- 137A-B Golden Age Drama (4-4).
- 140A-B Cervantes: Don Quixote (4-4).
- 141 Cervantes: Other Works (4).
- 142 Don Quixote in English Translation (4).
- 145 Colonial Spanish American Literature (4).
- 150 Eighteenth Century Spanish Culture (4).
- 161 Spanish Romanticism (4).
- 165A-B Nineteenth Century Spanish Fiction (4-4).
- 170A-B Spanish Literature from 1898 to 1936 (4-4).
- 175 Contemporary Spanish Literature (4).
- 176 Contemporary Spanish Culture (4).
- 178 Mexican Culture (4).
- 180 Mexican Civilization (4).
- 183AA-ZZ Studies in Hispanic Literatures (4).
- 185A-B Contemporary Spanish-American Fiction (4-4).
- 186A-B Mexican Literature.
- 187A-B Modern Hispanic Drama (4-4).
- 189 Modern Spanish American Poetry (4).
- 191 The Theme of Don Juan in Spanish Literature (4).

Master of Arts

Admission Requirements and Prerequisites

Students who wish to pursue work toward the Master of Arts degree in Hispanic Civilization at UCSB must meet the general requirements for admission to graduate standing. Completion of the undergraduate major in Hispanic Civilization is desirable but not necessary. Undergraduate deficiencies as stipulated by the Hispanic Civilization Committee must be made up in the first year and do not count in satisfaction of graduate degree unit or course requirements. A good reading knowledge of either Spanish or Portuguese is strongly recommended as prerequisite for admission into the program. At the outset of graduate

work, students should confer with the Chairperson of the Hispanic Civilization Committee.

Degree Requirements

The Master of Arts degree in Hispanic Civilization will be awarded to students who satisfy the requirements prescribed by the Graduate Council and who, in addition, meet the following requirements:

1. Foreign Language. A very good reading knowledge of Spanish or Portuguese is absolutely required. The student must show proficiency in one of the above languages through courses taken or must pass a reading examination.

It is expected that the candidate will meet this requirement during the first quarter of the graduate program. In no case may the student take the Comprehensive Examination or submit a thesis until the foreign language requirement has been met.

2. Program of Study. Individual student programs must be approved by the Chairman of the Hispanic Civilization Committee. The following two plans are available:

Plan I — The student must complete at least 30 units of upper division and graduate course work dealing with Hispanic Civilization and write a thesis (six additional units). The 30 units must include not less than 16 in graduate seminars or graduate level courses. At least eight graduate units must be taken in each of two departments. The student (with the consent of the Hispanic Civilization Committee) may choose a thesis adviser, but the finished thesis must be approved by a committee consisting of the thesis adviser and two additional faculty members nominated by the Chairperson of the Hispanic Civilization Committee and approved by the Graduate Dean.

Plan II — The student must complete at least 36 units of upper division and graduate course work dealing with Hispanic Civilization. The 36 units must include not less than 20 units of graduate seminars or courses of graduate level. At least eight but preferably 12 or more graduate units must be taken in each of two departments. A student who elects *Plan II* must demonstrate graduate level ability in research and writing and submit to the Hispanic Civilization Committee two term papers written for any graduate courses taken. After approval by the Committee, the candidate will be permitted to go on to the Comprehensive Examination. The latter will be administered by an examination committee of three faculty members nominated by the Chairperson of the Hispanic Civilization Committee and approved by the Graduate Dean and will cover the major course work of the student and any other additional reading deemed pertinent.

Hispanic Civilization Annual Lecture

This Committee also sponsors an annual lecture on some aspects of Hispanic Civilization by a distinguished visiting lecturer.

Correspondence information

Those desiring additional information should write:
Chairperson, Hispanic Civilization, University of California, Santa Barbara, California 93106 Phone:
(805) 961-3662

History

Professors

Lawrence Badash, Ph.D., *Yale University; history of science.*

Morton Borden, Ph.D., *Columbia University; early national U.S.*

⁴ W. Elliot Brownlee, Ph.D., *University of Wisconsin; American economic.*

Chi-yun Chen, Ph.D., *Harvard University; ancient China.*

Robert O. Collins, Ph.D., *Yale University; Africa.*

Alexander DeConde, Ph.D., *Stanford University; U.S. diplomatic.*

Dimitrije Djordjevic, Ph.D., *University of Beograd; Southeast Europe.*

Abraham Friesen, Ph.D., *Stanford University; Renaissance-Reformation.*

Frank J. Frost, Ph.D., *UC Los Angeles; ancient Greece.*

Alfred M. Gollin, D.Phil., D.Litt., (*Oxon.*); *modern Britain.*

Otis L. Graham, Jr., Ph.D., *Columbia University; twentieth century U.S.*

²C. Warren Hollister, Ph.D., *UC Los Angeles; Medieval Europe.*

³Immanuel C. Y. Hsu, Ph.D., *Harvard University; modern China.*

Robert A. Huttenback, Ph.D., *UC Los Angeles; British Empire (Chancellor).*

¹Wilbur R. Jacobs, Ph.D., *UC Los Angeles; colonial and revolutionary U.S.*

Robert L. Kelley, Ph.D., *Stanford University; American intellectual and political history.*

¹ Harold C. Kirker, Ph.D., *UC Berkeley; American cultural.*

Leonard M. Marsak, Ph.D., *Cornell University; European intellectual.*

Roderick W. Nash, Ph.D., *University of Wisconsin; American environmental and popular cultural.*

Richard E. Oglesby, Ph.D., *Northwestern University; The American West.*

Philip W. Powell, Ph.D., *UC Berkeley; Spain and Spanish Empire.*

Carroll W. Pursell, Jr., Ph.D., *UC Berkeley; American technology.*

Joachim Remak, Ph.D., *Stanford University; modern Europe (Chairman).*

Jeffrey B. Russell, Ph.D., *Emory University; Medieval Europe*

John E. Talbott, Ph.D., *Stanford University; France; Marine History.*

Associate Professors

F. A. Bonadio, Ph.D., *Yale University; Civil War.*

Alexander B. Callow, Ph.D., *UC Berkeley; American urban.*

² ³ Harold A. Drake, Ph.D., *University of Wisconsin; Rome.*

Francis A. Dutra, Ph.D., *New York University; Brazil and Portugal.*

Mario T. Garcia, Ph.D., *UC San Diego; Chicano.*

Carl V. Harris, Ph.D., *University of Wisconsin; American South.*

Stephen N. Hay, Ph.D., *Harvard University; India.*

G. Wesley Johnson, Ph.D., *Columbia University; Africa.*

Albert S. Lindemann, Ph.D., *Harvard University; modern European socialism.*

J. Sears McGee, Ph.D., *Yale University; Tudor, Stuart.*

David P. Rock, Ph.D., *Cambridge University; Latin America and Argentina.*

⁴ Henry DeWitt Smith II, Ph.D., *Harvard University; Japan.*

¹ Paul M. Sonnino, Ph.D., *UC Los Angeles; early modern Europe.*

Assistant Professors

Patricia C. Cohen, Ph.D., *UC Berkeley; women, social history.*

Douglas H. Daniels, Ph.D., *UC Berkeley; Afro-America.*

Nancy E. Gallagher, Ph.D., *UCLA; Middle East.*

Professors Emeriti

Henry M. Adams, Ph.D., *Stanford University.*

A. Russell Buchanan, Ph.D., *Stanford University.*

Donald C. Davidson, Ph.D., *UC Berkeley.*

Donald M. Dozer, Ph.D., *Harvard University.*

George M. Haddad, Ph.D., *University of Chicago.*

¹Absent on Leave Fall 1980

²Absent on Leave Winter 1981

³Absent on Leave Spring 1981

⁴Absent on Leave 1980-81

⁵Absent on Leave in Residence 1980-1981

Concerns of the department

History is studied to enhance the quality of life for the individual. Without any knowledge of the past, the individual becomes a prisoner of the present—able neither to comprehend present circumstances and their causes nor to deal intelligently with present problems.

As a liberal discipline, the aim of history is to permit students to transcend their own cultural limits and, by the study of other societies in other ages, to open their eyes to the diversity of the human environment.

It has often been noted that history is the first truly "interdisciplinary" discipline. This is true because everything no matter how specialized, has a history, and therefore everything is a proper subject of study for the historian. In this department, for instance, the course offerings range not only from the ancient world to modern times, but also from the history of philosophy and ideas to the history of ma-

chines and technology, from governmental elites to popular culture, and everything in between.

History is also “inter-disciplinary” because historians do not limit themselves to one set of research methods. In searching for insights, historians have freely turned to the techniques of archaeology, anthropology, economics, sociology, psychology, and computer science, among others, when these have promised new answers to old problems.

Not only does everything have a past, but the past is also in everything. Such professions as law, business, science, medicine, and governmental institutions—to name but a few—all have been influenced by the general history of the nation. To grasp fully the nature of these professions and institutions, then, a study of history is required.

History and the professions

While personal enrichment is the prime reason to choose history as a field of study, the nature of the discipline makes it highly desirable as a training ground for further work in many professional fields. The traditional career for the history major has been in the teaching profession, at every level from elementary school to the university classroom. But the breadth of knowledge acquired by a history major has also been of advantage to students intending a career in business or business management, and stress on the development of research skills, as well as on the ability to think and write clearly, has proven to be excellent preparation for law school and for a wide variety of research and writing jobs in government and business.

A survey of graduating seniors who majored in History in 1977-78 indicated that most planned to continue their education upon graduation. Most commonly, they intended to go to law school, graduate school, schools of education, and business school. Others planned further study in art, journalism, medicine, and social work. The long-range plans of these graduating seniors included careers in education, government, politics, and library or museum work.

Departmental Advising and Publications

The History Department designates one of its members each year as Principal Undergraduate Adviser, an individual empowered to sign petitions, decide questions of substitutions, and determine credit for courses transferred from other institutions. Beyond that, certain members of the department are appointed undergraduate advisers, and each history major is assigned to one of them. All department members are available to any student for advice and counsel. Separate advisers are provided for M.A. and Ph.D. candidates. The History Department publishes *History at Santa Barbara*, a descriptive pamphlet outlining the department, its general goals, and the courses and programs available to students, and *Graduate Programs in History*.

Undergraduate Honors

The Senior Honors Thesis Program

Each year, a special committee of the department will invite qualified majors to participate in a senior honors thesis program, designed to allow them to pursue independent research on a topic of particular depth and complexity. “Qualified majors” must have

- * junior standing
- * completed the History 195 requirement
- * completed at least 30 units in the major (including History 195)
- * a Grade Point Average of 3.6 or better in the major

Letters will be sent to qualified majors in the Spring quarter of their junior year (this means that the History 195 requirement must be completed no later than Winter quarter of that year). To be accepted into the program, these students will have to submit two letters of recommendation from members of the faculty. Under ordinary circumstances, one or both of these same faculty members will serve as the student’s thesis adviser.

All students admitted into the program will enroll in History 195H, the Senior Honors Seminar, for the three quarters of their senior year. The 12 units earned in this seminar will not apply to the 40 upper-division units required of all majors. The fall term of the seminar will be devoted to reading and writing papers on one book a week from a list drawn up by the honors faculty. Students also will be expected to have built a working bibliography for their thesis topic by the end of the fall term.

The remaining two terms of the seminar will be devoted to independent research, conducted in consultation with the thesis adviser. The seminar will convene intermittently to hear on-going progress reports from the honors candidates.

At the end of the Spring term, the student will submit three copies of his or her thesis to the department office, one of which will be bound and placed in the department’s files. The other two copies will be retained by the student’s thesis committee.

Honors graduates will be identified separately each year at the head of the graduation list for history.

The J. Bruce Anderson Fellowship

An annual fellowship award, endowed by the parents of Dr. Anderson. Students must be in the History Ph.D. program at UCSB. Any field of history is acceptable. Selection, made by the department’s financial aids and scholarships committee, is based upon overall academic excellence, an interest in and commitment to the use of media in teaching and/or scholarship, and a written statement from the candidates.

The A. Russell Buchanan Award in History

Endowed by the UCSB Alumni Association in honor of one of the department’s most distinguished and beloved professors, the Russell A. Buchanan Award is given annually to the graduating senior history major deemed most outstanding by a committee of History faculty. Judging is

made among students nominated by members of the faculty. The award is presented at a public ceremony held in conjunction with University Day, at which the award winner presents a public address on a topic of his or her own choice. The winner's name is engraved on a perpetual trophy, which hangs in the History office. A cash prize of \$250 accompanies the award.

Phi Alpha Theta

The Gamma Iota Chapter of the National History Honorary, Phi Alpha Theta, was established on the UCSB campus in 1956. Membership is open to History majors who have completed at least five courses in the major with a grade point average of 3.4 or better. In any given year, about 15 per cent of the department's majors qualify for invitation to membership. History graduate students and faculty also belong to Phi Alpha Theta, thereby allowing the organization to provide a common meeting ground for students of history at all levels. In addition to regular meetings and talks, Phi Alpha Theta sponsors student papers at regional and national conventions of the society. Inquiries about the organization may be made at the History Office.

Bachelor of Arts

Preparation for the Major—Lower Division

Required: A total of 28 lower division units, which must include the following: (1) 12 units of History 4A—4B—4C; (2) 4 lower division units in any area of non-European history; (3) 4 lower division units in Asian, African, or Middle Eastern history; (4) 8 lower division units in any historical field of the student's choice.

Upper Division Major

Required: 40 units of upper division work in history, four units of which must be History 195. History 102 is not acceptable for the upper division major.

History 195 is a one-term, seminar style course in which the student is expected to produce a research paper in the field of interest of the professor offering the course. For instance, if the course is being offered by an American historian, the paper will be devoted to some topic of American history; if by a European historian, to some topic of European history. It is usually desirable for students to take History 195 in a field with which they already have some background, or from a professor with whom they have done work previously. Since enrollment in each section is restricted (usually to a maximum of twelve), and since each professor usually will offer only one section a year, students are advised to make plans for completing this requirement with the professor of their choice well in advance of graduation.

History 195 may be taken more than once, and students serious about developing their research and writing skills are urged to consider doing so. Certain other courses designated with the letter "Q" are run on the same format and may be substituted for the History 195 requirement upon the written consent of the instructor and the Principal Undergraduate Adviser.

Although the History Department does not require a for-

eign language, those interested in history outside the English-speaking world and those who contemplate graduate studies will be well advised to take a foreign language.

Substitution of requirements for major

Students who have reached upper division status without having completed the lower division requirements for the major are permitted to substitute up to 12 units of upper division courses for the lower division requirements on a one-for-one basis without the need to petition. A list of acceptable substitutes may be obtained at the History Department office.

Courses thus substituted may not be used to fulfill the required 40 units of upper division work for the major in history, though credit will be applied toward the 60 units in upper division courses required for the B.A. degree.

Master of Arts

Admission Requirements and Prerequisites

Students who wish to pursue work toward the Master of Arts degree in History at the University of California, Santa Barbara, must meet the general requirements for admission to graduate standing. In addition they will be expected to have completed an undergraduate major in history or its equivalent. Undergraduate deficiencies as stipulated by the department must be up in the first year and do not count in satisfaction of graduate degree unit or course requirements. At the outset of their graduate work, students should confer with the departmental M.A. Adviser.

The Department of History regards its M.A. degree program as a general rather than a specialized program. The entrance requirements for both the M.A. and Ph.D. programs are virtually the same, so that the decision to enter the M.A. program amounts to a preference for training in general rather than more specialized fields. (Please note, however, that even the Ph.D. program has important general aspects.) The M.A. candidates should particularly notice that the department offers reading courses (H200) designed to cover large, general fields, whereas the H201s are reading courses likely to cover more specialized fields.

Degree Requirements

The Master of Arts degree will be awarded to students who satisfy the requirements prescribed by the Graduate Council and who, in addition, meet the following requirements of the Department of History.

1. Foreign Language The passing of a reading examination in at least one foreign language approved by the Department. It is expected that the candidate will meet this requirement during the first quarter of the graduate program. In those cases in which a student is presenting a master's thesis and *two* comprehensive examinations, *one* of the latter may be taken prior to the language examination. In no other case may the comprehensive examinations be taken until the foreign language requirement has been met.

2. Units of work The completion of 36 units of upper division and graduate history courses with at least a 3.0 average. At least 20 of these units must be in the graduate

courses numbered between 200 and 290, including at least eight units in research seminars (numbered between 202 and 290). With the permission of the professor who will supervise the work, a candidate may write a thesis within his field of specialization in partial fulfillment of the Master of Arts requirements. The student will be allowed a maximum of six units of credit for the thesis (these units will not count as a substitute for one of the two research seminars). The thesis must be approved by a committee consisting of two departmental and one extradepartmental members. Its membership will be selected by the departmental Graduate Committee.

3. Comprehensive examinations The candidate for the M.A. degree must pass a written three-hour examination in one field selected from any of the following three groups:

Group I	Group II	Group III
Ancient History Medieval History Modern Europe, 1450 to 1815 Modern Europe, 1789 to present	East Asia before 1800 East Asia since 1800 South Asia Near Eastern History Africa History of Science and Technology	United States to 1865 United States since 1840 Latin America, Colonial Period Latin America, National Period United States History to the Mid-Nineteenth Century with Special Emphasis on Afro-American, Chicano, or Native American History* or United States History since the Mid-Nineteenth Century with Special Emphasis on Afro-American, Chicano, or Native American History*

*The Department specifies that for either of these two examinations, the test will consist of three questions on general United States history, and three questions on the ethnic minority. The student must answer three of the six questions, but at least ONE must be from each group. In addition the student must elect one of the following options:

- (1) A second three-hour examination in one field other than that of the first examination.
- (2) A thesis on a subject to be determined in consultation with his adviser. The thesis subject must fall within the context of a field other than that of the first examination, but not necessarily a different group.

No candidate may be allowed to take the M.A. examination more than twice.

Doctor of Philosophy

Ph.D. graduate applications for Fall must be received in the Graduate Division by April 15.

The History Department offers a program leading to the Ph.D. degree with specialization available in most areas of history. Students seeking admission to the doctoral program should apply to the Chairperson of the Department.

Admission

The Graduate Committee of the Department of History may admit a beginning graduate student directly into the Ph.D. program if the student does not seek terminal M.A. degree and meets the standards for admission. The following factors are considered in the assessment of a student's record: Intellectual attainment, skill in the use of the English

language, academic honors, letters of recommendation, practical experience where relevant, and information obtained from interviews.

Any student who has been admitted to the doctoral program, but who is unable to complete it, may ask to be considered for a terminal M.A. degree. If the student has passed one foreign language examination, and if the Doctoral Committee finds that the student has approximately met the unit requirements for the M.A., that committee may then recommend that the student be eligible to take two M.A. comprehensive examinations according to the regulations established for the regular M.A. candidates.

Residence At least six quarters in residence of full-time study and research in the doctoral program.

Languages The minimum language requirement is proficiency in one foreign language relevant to the candidate's field of study.

The student is urged to complete the foreign language requirement as soon as possible, but in no case later than the end of the second year in the doctoral program. *No student will be allowed to take the general examinations for the Ph.D. degree without having completed the language requirement.*

The program

The program falls into two parts: Preparation for and passage of the general doctoral examinations; preparation of the dissertation.

Preparation for general examinations Upon admission and arrival at Santa Barbara, the student must confer with the Director of Doctoral Studies who will explain all requirements and assign the candidate's Doctoral Adviser under whom the student will work. The Doctoral Adviser will be a specialist in the student's desired field of historical specialization and will act as chairperson of the examination committee. This committee will consist of the three professors under whom the student will be doing doctoral work in the historical fields as well as one professor in the outside field to be presented for examination. The membership of the committee will be recommended by the candidate's Doctoral Adviser and approved by the Director of Doctoral Studies and the Graduate Dean, and entered upon the student's graduate record card.

During the first quarter, the student, in consultation with his Doctoral Adviser, will select the three fields of history and one related field of study that will be presented in the qualifying examination. The outside field must be comparable in size and scope to the history fields. One field of general historical study must be chosen from the list below, as well as a second field consisting of a specialized historical area within the general field. The specialized field will usually embrace the doctoral dissertation. A third field of historical specialization outside the general field, and a fourth field related to, but outside of the History Department, will also be required.

General Fields

1. The United States
2. Modern Europe
3. Latin America
4. Medieval Europe
5. East Asia

6. The Middle East
7. South Asia
8. The Ancient Mediterranean World
9. Africa
10. Science and Technology.

The candidate's Doctoral Adviser will recommend to the Director of Doctoral Studies the four fields to be presented by the candidate. Once the Director of Doctoral Studies, acting for the department, approves these fields, they will be entered upon the student's graduate record card. Changes in the fields will not be made later than six months before the general examinations are taken.

The student will be expected to have taken, prior to the general examinations, at least six quarters of history research seminars, four quarters of which must be taken beyond the M.A. degree or its equivalent. The student must take either a graduate research seminar or another graduate course in each of the four areas presented for examination. Students are urged to take a course in historiography if they have not done so prior to admission to the doctoral program. History 201 courses are not traditional research seminars. They emphasize interpretation and are directed at analysis of the historical literature of the various fields in which they are given. History 596 is not acceptable in lieu of a 201. History 599 is designed to provide unit credit for students who are working on their doctoral dissertations (no more than six units a quarter). Reading programs for the Ph.D. general examinations should be developed in consultation with the members of the examination committee. It is the duty of the student and Doctoral Adviser—and not the Director of Doctoral Studies, the Ph.D. Committee, or the Graduate Secretary—to see that all of these requirements are met prior to examination and that the student's office file is kept fully up to date.

Qualifying examinations for the Ph.D. are given annually at the beginning of October, January, and May. They should normally be taken no later than two full-time years after the student has entered the program. Within a period of one month the student will take two written examinations from his history fields; each examination will be of three hours' duration. Within one week of passing these written examinations, students will present themselves for an oral examination of at least two hours in duration in all four fields. The written examinations must be passed before the orals are taken. The selection of fields to be taken in the written examinations is to be approved by the Doctoral Adviser.

Dissertation The doctoral dissertation must be an original work of historical research in the field of the candidate's specialization, bringing new data or new interpretations to bear on historical problems or exploring untouched, but significant historical fields. It must be written in clear prose, must have intellectual depth, and must demonstrate a mastery of historical methodology.

Except as authorized by the Graduate Council, each student in a doctoral program must satisfy all requirements for the Ph.D. within seven calendar years after being admitted to the Ph.D. program.

The examination committee will also serve as the dissertation committee. The committee's approval of the topic of the dissertation will constitute a departmental commitment, subject only to questions of quality. Upon approval

of the dissertation by the committee, the candidate may be asked to appear at a date to be established by his Doctoral Adviser for a Special Examination (oral) in the field of the dissertation.

Teaching Assistantships A candidate will be required to qualify for and hold a Teaching Assistantship as part of the preparation for the Ph.D.

Doctoral programs in the Department of History are offered in all fields of history. *More detailed information may be obtained from the chairperson of the department.*

Graduate Program in Public Historical Studies

The Department of History has established within its graduate program a Public History Option at the master's and doctoral levels. A unique offering, available in no other American university, its purpose is to create a new kind of professional person: the *Public Historian*.

Such persons will be trained to serve as research historians working within the community at large, rather than in academic institutions. Either as persons in various types of private practice, or within the staffs of public agencies—as in city, county, state, and Federal governments—they will research and write historical studies of problems of concern to particular communities or other political jurisdictions; aid them in recapturing and in recording and understanding of their histories as communities and as organizations; and serve in a variety of other professional employments, as in giving testimony in court proceedings, preparing family histories, and preparing environmental impact statements.

For further information, request a copy of the *Announcement* from the Department, which describes curriculum and other aspects of the Program in detail.

Career opportunities

The history major, besides providing the student with a systematic and thorough background in the subject, trains him in the techniques and applications of basic research, a quality in growing demand. These basic research techniques are transferable to a variety of occupations and enhance the marketability of our graduates. In addition, the traditional areas of law, education, governmental service, and others, still look upon a history background as excellent preparation.

Teaching credentials

Students who complete a major in history may be eligible to pursue a California teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180 Phelps Hall.

Certain majors may require students contemplating a teaching career to complete specified courses within the major. These course requirements should be satisfied within the bachelor's degree program and prior to formal admission to the credential program. Consult with designated counselors in the Department of History for any special requirements in this field.

Correspondence information

Department of History, Ellison Hall, Room 4834,
University of California, Santa Barbara, California
93106. Phone: (805) 961-2991.

Offerings in History by Subject

(For course titles and descriptions, see offerings in History
by course number)

I. Methodology Courses

History 6, 103, 148Q, 195E-AM-LA-AS-AF, 195H, 199

II. European History

A. Core Survey Course

(required of all history majors):
History 4A-B-C, 4A(S)-B(S)-C(S)

B. Ancient and Medieval

1. Period Surveys:

History 111A-B, 113A-B, 115, 115G, 116, 145A-B, 150A

2. Topical Courses:

History 12, 13, 106A, 107S, 112A, 112F, 113Q, 114A-B,
115F, 115Q, 117A-B, 117Q, 119, 126C, 126Q

C. Renaissance, Reformation and Early Modern

1. Period Surveys:

History 120A-B, 120A(S)-120B(S), 121A-B-C, 129A-B-C

2. Topical Courses:

History 106B, 118, 129Q

D. Modern Europe

1. Period Surveys:

History 101D-E-F, 122A-B-C, 123A-B, 128A-B, 131

2. Topical Courses:

History 5FS, 106C, 123Q, 125A-B, 125Q, 127A-B, 127Q,
128Q, 141H, 192

E. National Histories

(all periods)

History 115G, 124E, 124M, 124P, 134A-B, 135A, 135B,
135C, 135D, 135Q, 137A-B, 137Q, 140A-B, 140A(S)-B(S),
140Q, 141A-B, 141Q, 150A-B, 150Q, 155A-B, 193A,
193B, 193Q

III. American History

A. Period Surveys:

History 17A-B-C, 17A(S)-B(S)-C(S), 161, 162A-B, 164C,
165, 166A-B, 170J-K

B. Regional Courses:

History 160A, 160B, 176A-B, 176Q, 177, 177Q

C. Topical Courses:

History 72, 74, 78FS, 79FS, 102, 105, 105Q, 130Q, 159A-
B, 159E, 159Q, 162Q, 163C-D-E, 163F, 163G, 163H,
164A, 164I, 166Q, 167A, 167B, 167C, 169A-B, 169M,
169Q, 171A-B, 171Q, 172A-B, 172QL, 173A-B, 173C,
173S, 173T, 174A-B, 174C, 174D, 174Q, 175A-B, 175D,
175Q, 178A-B, 178K, 178M, 178Q, 179Q, 179S, 179T,
191.

IV. Asian, African and Middle Eastern History

A. Period Studies:

History 15, 19, 46, 49, 110, 145A-B-C, 146A-B, 146Q,
147, 149A, 149B, 180, 183, 185A-B, 186A-B-C, 187A,
187B

B. Topical Studies:

History 86, 88, 90, 104, 143, 144, 147Q, 183, 188Q,
189Q, 190A, 190B, 190C

V. Hispanic American History

History 8Q, 9FS, 108A-B, 150A-B, 151A-B-C, 153, 153LP,
154A-B, 155A-B, 156A-B, 156Q, 157A-B, 157C, 158,
168A-B, 168Q

Offerings in History by Course Number

Lower Division courses

4A—B—C • Western Civilization (4-4-4) Staff [E1]

4A • Prehistory to 1050 A.D.

4B • 1050-1715 and

4C • 1715-Present.

History 4ABC is a general survey course, designed to acquaint the student with major developments that have influenced the course of Western Civilization since the earliest times. These developments are as likely to be in religion, the arts and sciences as in the more traditional political field.

Weekly discussion sections are an important feature of this course, enabling the student to develop and expand upon material presented during the lecture hour. *Offered annually in fall-winter-spring sequence.*

4A(S)—4B(S)—4C(S) • Western Civilization (1-1-1) Staff

After 4A—B—C begins, selected students will be invited to enroll in the honors seminar. Such students will receive one unit for the honors seminars, 4S, or a total of five units for History 4 per quarter.

5FS • Freshman Seminar (4) Talbott

Explores the question: What is History? The French Revolution is employed to examine the problem of how and why men study the past. *Offered infrequently.*

6 • Introduction to History (2) Staff

Weekly meetings with different members of the department for a presentation and open discussion of methods and problems in their fields and of the nature of history as a discipline. Each student will write a term paper on one or more aspects of this question. Enrollment only by personal interview with instructor. Since space is limited, interested students should arrange for interview well ahead of the first day of class. *Offered irregularly.*

8Q • Topical Studies in the History of the Western Hemisphere (4) Dutra [E1]

Prerequisite: Consent of instructor.

Tutorial guidance in individual reading programs and seminar discussions.

9FS • Freshman Seminar (4) Dutra

A reading and discussion course focusing on the special history of North and South America with a special emphasis on the interaction of Europeans, Native Americans, and Africans. Limited in enrollment to 12.

12 • Greeks and Barbarians (4) Frost [E1]

Prerequisite: Lower Division standing.

The story of the first great conflict between East and West, as told by the father of history, Herodotus. *Offered irregularly.*

13 • The Ides of March (4) Drake [E1]

Causes and consequences of the most famous date in Roman history, explored through literature, film, and ancient sources. *Offered periodically.*

15 • India Since 2500 B.C.E. (4) Hay [E1]

Cultural and political high points in the history of the South Asian sub-continent. the Indus Valley civilization; competing religious systems; life under the Mauryan, Gupts, and Mughal Empires; the Indo-British symbiosis and the emergence of independent India, Pakistan, and Bangladesh.

17A—B—C • The American People (4-4-4) Staff [E1]

17A. Colonial through Jacksonian Era

17B. Sectional Crisis through Progressivism

17C. World War I to the Present

A survey of the leading issues in American life from colonial times to the present. The course focuses on politics, cultural development, social conflict, economic life, foreign policy, and influential ideas.

Features discussion sections. *Offered annually in fall-winter-spring sequence.*

17A(S)—17B(S)—17C(S) • The American People (1-1-1) Staff

After History 17 begins, selected students will be invited to enroll in the honors seminar. Such students will receive one unit for the honors seminar (17S) or a total of five units for History 17 per quarter.

19 • The Rise of the People's Republic of China (4) Hsu [E1]

Examination of domestic and foreign factors leading to the rise of the People's Republic of China. The role of the United States will be stressed. *Offered periodically.*

46 • Survey of Middle Eastern History (4) Haddad [E1]

Emphasis on the meeting of civilizations in the Middle East, modernization and reform movements, and the background to contemporary problems and tensions. *Usually offered biannually in the spring.*

49 • Lost Kingdoms of Africa (Pre-Colonial History of Africa) (4) Johnson [E1]

This course will serve as an introduction to Upper Division work on the history of Africa. It will put forth basic conceptual ideas on studying Africa and give about a dozen case studies of traditional societies.

72 • The Modern American Mind (4) Kelley [E1]

An exploration of leading currents in modern thought. Particular attention to William James, Sigmund Freud, Erik Erikson, and to such broad social movements as the youth culture, social prejudice, and the impact of science. *Usually offered annually in fall.*

74 • Science, Technology & American Society (4) Pursell [E1]

A reading and discussion course of limited enrollment, aimed at exploring selected topics in the history of science, technology, and their relations with American society in general. *Offered irregularly.*

78FS • Freshman Seminar (4) Callow

A discussion and reading course concerning the critical problems that plague the city today, such as poverty, minority groups, crime and the police, politics, and city planning.

79FS • Freshman Seminar (4) Jacobs

Research seminar in American Indian-White relations for freshman students

86 • China's Cultural Tradition (4) Chen [E1]

A brief survey of China's magnificent cultural achievements in the past, and a study of how the great tradition became an impediment to revolutionary changes and in what way it still shapes the course of the present revolution.

88 • The Samurai Tradition in Japanese History (4) Smith [E1]

This course investigates the myths and realities of the traditional Japanese military elite, the *samurai* class, from its medieval origins to its impact on contemporary Japanese values. Intended as a general introduction to Japanese history. *Normally offered in fall quarter, alternating with History 90.*

90 • Japanese History through Art and Literature (4) Smith [E1]

An introduction to Japanese cultures, focusing on three or four specific periods of cultural flowering and relying on the evidence of literature, painting, and architecture. *Normally offered in fall quarter, alternating with History 88.*

Upper Division courses

101D—E—F • Modern Europe, 1648-Present (4-4-4) Staff [E1]

D. Philosophers and Kings, 1648-1789: The Age of Absolutism and Enlightenment. Usually offered annually in the fall. E. A Century of Revolution, 1789-1871: Europe in the 19th century: political and economic revolution and reform, rise of nationalism, scientific exploration, popular culture, origins of the welfare state. Usually offered annually in the winter. F. Progress and Despair, 1871-present: 20th century democracy, mass society, the two world wars, end of empires, life in a technological and scientific world.

102 • Main Themes in American History (4) Staff [E1]

Limited to non-history majors. Not a survey course, the lectures are selective and will emphasize various themes that Americans have been concerned with historically.

103 • European Historiography (4) Friesen [E1]

Prerequisite: History 4A—B—C, or equivalent.

The study of the development of history as an independent discipline and the influence of intellectual and other trends or events upon the interpretation of history from the Greeks to the Moderns. *Offered periodically.*

104 • Eight Great Minds in World History (4) Hay [E1]

Basic ideas about human nature and human potentialities are studied through the sayings attributed to Confucius, the Buddha, Jesus, and Muhammad, and the writings of Lincoln, Marx, Gandhi, and Einstein. The historical influences and future value of these ideas will also be considered.

105 • The Atomic Age (4) Badash [E1]

The history of military and civilian uses of nuclear energy and the attendant problems. Topics included: Manhattan Project, decision to use the

bomb, legislation, AEC, arms race, testing, fallout, civil defense, disarmament efforts, reactors, atoms for peace, foreign programs, espionage. *Usually offered every fall.*

105Q • Special Studies in Atomic Age Problems (4) Badash [E1]

Prerequisites: Recommended 105 or 106C.

A reading and discussion course on the relationship between science, technology and society. Topics, one each year, will include effect of military research on science, scientific advice to government, science and social responsibility, politics of science, technology assessment. May be taken more than once for credit. *Usually offered every other winter.*

106A • The Origins of Western Physical Science, Antiquity—1600 (4) Badash [E1]

The development of astronomy, physics, chemistry, and the organization of science, traced from Babylonian times through the Greek, Roman, Islamic periods, and the Middle Ages in the West, to the scientific Renaissance. Emphasis on the growth of scientific ideas. *Offered every other fall.*

106B • The Scientific Revolution, 1600-1875 (4) Badash [E1]

The establishment of heliocentric astronomy and mechanical philosophy by Galileo, Newton, and others, the creation of scientific societies and periodicals, the rise of chemical and electrical sciences, the influence of science upon the Enlightenment, physical science survey in 18th and 19th centuries. *Offered every other winter.*

106C • Modern Physical Science 1875—Present. (4) Badash [E1]

The Second Scientific Revolution, including the discoveries of x-rays, radioactivity, the electron, relativity, and quantum theory; the growth of atomic and nuclear physics and of quantum mechanics; aspects of astronomy, chemistry, Nazi science, scholars' migration, and discovery of nuclear fission. *Offered every other spring.*

107S • History of Seafaring (4) Frost [E1]

A history of man and the sea from earliest times to the era of the clipper ships. Emphasis on exploration, discovery and the subsequent effects of overseas trade, colonization and conquest on human history.

108A—B • Comparative History of the Americas (4-4) Dutra [E1]

108A • A comparative study of expansion, race relations, society, culture, economy, religion and government in the Western Hemisphere, 1492-1808. *Offered every fall.*

108B • A comparative study of revolution, reform, reaction, minorities, economic growth, imperialism, government, and intellectual developments in the Western Hemisphere, 19th and 20th centuries. Lower Division students welcome. *Offered every winter.*

110 • Ancient Near East (4) Haddad [E1]

Study of Near Eastern civilizations from the Stone Age to the end of the Persian empire. Political history and cultural contributions of the Sumerians, Assyro-Babylonians, Egyptians, Hittites, Canaanites, Hebrews, Aramaeans and Persians. *Offered biannually in the spring.*

111A—B • History of Greece (4-4) Frost [E1]

111A • From Neolithic times to Alexander the Great. *Usually offered annually in the winter.*

111B • From the death of Alexander to the reign of Justinian. *Usually offered annually in spring*

112A • The Ancient Aegean (4) Frost [E1]

Prerequisite: Upper Division standing or instructor's consent.

Pre-history and archaeology of the early Aegean littoral, from Mycenae to the Lyric Age. *Offered infrequently.*

112F • Women in the Ancient Greek World (4) Frost [E1]

A history of the evolving roles of women in Greek society as portrayed by literature, archaeology and the fine arts. *Offered periodically.*

113A—B • Roman History (4-4) Drake [E1]

113A • From Neolithic times to the fall of the Republic. *Usually offered annually in the winter.*

113B • The Roman Empire. *Usually offered annually in the spring.*

113Q • Special Studies in Roman History (4) Drake [E1]

Prerequisite: History 113A—B or consent of instructor. Usually offered annually in the winter.

114A—B • History of Christianity to the Reformation (4-4) Russell [E1]

History of Christian Thought and Institutions from the Apostolic Period through the Middle Ages

114H • The Devil: The History of a Concept (4) Russell [E1]

The history of the development of the concept of the Devil and of the problem of evil in Jewish, Classical, and Christian thought, with an emphasis on theology, art, and literature from the early church through the middle ages.

115 • The Fall of Rome and the Birth of Europe, 300-1050 (4) Hollister [E1]

Prerequisite: History 4A—B—C, or equivalent.

The political, economic, and cultural evolution of Europe from the time of Constantine to the mid-eleventh century.

115F • The Medieval Church (4) Hollister [E1]

A survey of the Church in Western Europe during the Middle Ages, stressing the period ca 900 to ca 1300.

115G • Medieval England, A.D. 1000 to 1485 (4) Hollister [E1]

A lecture course in English history from the late Anglo-Saxon period to the beginning of the Tudor age.

115Q • Special Studies in Medieval European History (1-4) Hollister

Prerequisites: History 115 or 116 or consent of instructor.

Study of specified topics in medieval European

history. A research paper will be required. May be taken more than once.

116 • The Civilization of the High Middle Ages, 1050-1350 (4) Hollister [E1]

Prerequisite: History 4A—B—C, or equivalent.

European civilization during the High Middle Ages. The struggle between Church and State, the rise of feudal monarchies, the revival of commerce, and the flowering of medieval culture.

117A—B • Thought and Letters in Medieval Europe (4-4) [E1]

Prerequisites: History 4A—B.

A topical study of several aspects of medieval thought with emphasis on the discussion of selected readings. The first quarter of the course will end with the humanistic revival of the twelfth century; the second, with the conciliar experiment of the fifteenth century. *Usually offered every other year; no set quarter.*

117Q • Special Studies in Medieval Culture (4) [E1]

Prerequisites: Either 117A or B or Philosophy 20B or Rel St 187 or consent of instructor.

A study of more specialized aspects of medieval cultural and intellectual history in which students select topics for individual research.

118 • Varieties of Utopianism and Social Reform from Joachim of Fiore to Karl Marx (4) Friesen [E1]

Prerequisite: History 4A—B—C.

A study of the varieties of utopian thought from Joachim of Fiore (1200) to Karl Marx (1848) and the relevance of this thought to social reform. *Offered infrequently.*

119 • The Medieval Town and Countryside (4) [E1]

Prerequisite: History 4A—B or equivalent.

A study of the economic and social transformations of Western Europe from the decline of imperial Rome to the Renaissance. Topics included are agrarian techniques, the character of medieval town life, the increasing importance of a money economy, and the conditions of social change. *Offered every other year; no set quarter.*

120A—B • Renaissance-Reformation (4-4) Friesen [E1]

Prerequisite: History 4A—4B—4C, or equivalent.

The political, economic and cultural evolution of Europe, 1300-1648. *Usually offered annually.*

120A(S)—120B(S) • Renaissance-Reformation (1-1) Friesen

Prerequisite: concurrent enrollment in History 120A—B.

A weekly, one-hour section, open to any students who would like to supplement the material of the lecture course with additional readings and discussion. Such students will receive one unit for the discussion section, 120S, or a total of five units for History 120 per quarter.

121A—B—C • History of Europe in Seventeenth and Eighteenth Centuries (4-4-4) Sonnino [E1]

121A • 1600-1715, political, social, economic, diplomatic, intellectual history in comparative and national contexts.

121B • 1715-1789, the crisis of the old regimes, the Enlightenment

121C • 1789-1815 French Revolution and Napoleon

122A—B—C • History of Europe from the Eve of the French Revolution to 1919 (4-4-4) Lindemann, Remak [E1]

Prerequisite: History 4A—B—C or equivalent.

A political, economic, cultural, and diplomatic history of Europe from the Enlightenment to the end of the First World War. *Offered alternate years, will be offered 1979-80.*

123A—B • History of Europe in the Nineteenth and Twentieth Centuries (4-4) [E1]

Prerequisite: History 4A—B—C, or equivalent. History 123A is prerequisite to History 123B.

European civilization in the nineteenth and twentieth centuries; inter-relationships of the centuries and of Europe to the world

123Q • George Orwell's Europe, 1920-1950 (4) Talbott [E1]

Prerequisites: History 4C or consent of instructor.

A study of the author of *1984* and his writings on urban poverty, popular culture, the Great Depression, imperialism, the Spanish Civil War, totalitarianism. Limited enrollment. *Offered periodically.*

124E • The Balkans and the Eastern Question (4) Djordjevic [E1]

European powers and the Balkans from the Napoleonic Wars till the invasion in World War II. The part which the Balkans played in European diplomacy from the Vienna Congress 1814 till the Yalta and Potsdam agreements 1945. *Usually offered annually.*

124M • Beyond Marx and Lenin: The Yugoslav Experiment (4) Djordjevic [E1]

Self management and nonalignment. Nationalism and communism in Yugoslavia. Dissidents and internal controversies. Recent social, political, and cultural developments. What after Tito? *Usually offered annually.*

124P • Peasant, National and Communist Revolutions in the Balkans (4) Djordjevic [E1]

Revolutionary origins of the Balkan states in the nineteenth century. The Balkans in two World Wars. Origins and consequences of communist revolutions. The Balkan microcosmos nowadays: nonaligned Yugoslavia, Soviet Bulgaria, pro-Chinese Albania, emancipated Rumania, pro-Western Greece. *Usually offered annually.*

125A—B • Intellectual History of Modern Europe (4) Marsak [E1]

The focus is on scientific ideas and ethical thought in France, Britain, and Germany. Topics include the metaphysics and ethical values of modern science, sovereignty, and the modern state, the idea of progress, the ideas of liberty versus freedom, bourgeois liberalism and socialism, and secular humanism. Reading is from the works of Bacon, Descartes, Pascal, Hobbes, Locke, Newton, Voltaire, and Hume the first quarter; and in the second quarter from Kant, Rousseau, Hegel, Mill, Marx, and Darwin

125Q • Special Studies in Contemporary

Thought (4) Marsak [E1]

Prerequisites: History 125A or 125B.

The decline of science and the rise of technicism, the decline of bourgeois liberalism, psychoanalysis, varieties of existentialism. Readings include Nietzsche, Freud, James, Sartre, Camus. A colloquium limited in enrollment to fifteen students.

127A—B • History of European Socialism, 19th & 20th Centuries (4-4) Lindemann [E1]

Special emphasis on Marxism, its origins and competitors; the relationship of Lennism to orthodox Marxism; the development of Stalinist Communism; the deterioration of socialist ideology as a political force. *Offered alternate years.*

127Q • Studies in the History of European Socialism (4) Lindemann [E1]

A seminar course designed to explore in depth some of the central historical questions arising in 127A—B. Weekly discussions and a research paper required. *Offered irregularly.*

128A—B • Twentieth Century Europe (4-4) Remak [E1]

A political, economic, cultural and diplomatic history of Europe from the First World War to the present.

128Q • Special Studies in 20th Century Europe (4) Remak [E1]

Prerequisite: History 128A—B; permission of instructor.

Special topics in European history from World War I to present.

129A—B—C • Europe in the 17th Century (4-4-4) Sonnino [E1]

Prerequisite: History 4A—B—C

Economic, social, political and intellectual history of the 17th century. Students who have taken History 129A—B may take the third quarter as History 129Q and petition to have the course accepted in lieu of History 195.

129Q • Europe in the 17th Century (4) Sonnino [E1]

Offered simultaneously with History 129C. Students may petition to have this course approved as a substitute for the required History 195.

130Q • The Santa Barbara Channel (4) Talbott [E1]

Undergraduate seminar on the maritime history of the Channel from the earliest times to the present day. Stress is laid on marine-mammal hunting, commercial fishing, energy exploration and exploitation, scientific research and sea oriented recreation. Enrollment is limited to 15 students.

131 • Europe Since Hitler (1945 to present) (4) Talbott [E1]

The recovery of Europe from the ruins of World War II and its formation into an economic bloc challenging the industrial supremacy of the United States. The Cold War and the impact of revolutionary change on politics and society. *Offered infrequently.*

134A—B • Russian intellectual History (4-4) [E1]

Prerequisite: History 4A—B—C.

134A • From the introduction of Christianity to the mid-nineteenth century

134B • From the mid-nineteenth century to the present

135A • History of Russia: Origins to 1800 (4) [E1]

Byzantine, Kievan, and Mongol influences will be briefly considered, but the major emphasis will fall on the Muscovite and early Imperial periods, that is, about 1450-1800. Special attention to the reigns of Ivan the Terrible, Peter the Great, and Catherine the Great. *Usually offered fall quarter.*

135B • History of Russia: 1800 to 1917 (4) [E1]

Covers the period from the reign of Alexander I to the downfall of the tsarist system at the outbreak of the February Revolution. Themes explored will include the contrast between political stagnation and cultural florescence, and the struggle between bureaucrats anxious to strengthen the autocratic system and revolutionaries determined to overthrow it. *Usually offered winter quarter.*

135C • History of Russia: 1917 to present (4) [E1]

Covers the entire period, but with major emphasis placed on the first two decades of Soviet rule. Covered in depth will be the Russian Revolution, the politics and ideologies of Lenin, Trotsky, and Stalin, mass collectivization, and mass purges. Also dealt with will be Khrushchev's De-Stalinization campaign, the role of Solzhenitsyn and other dissidents, and U.S.-Soviet relations. *Usually offered spring quarter.*

135D • Radicals and Revolutionaries: Opposition in Imperial Russia (4) Johanson [E1]

This course will explore the development of various forms of opposition to the autocratic regime during the Imperial era. Special emphasis will be placed on (a) literature and literary criticism as forums for social and political criticism, and (b) the development of revolutionary ideologies, tactics, and organizations. Readings for the course will include the works of individual authors and literary critics such as Radischev, Chaadaev, Belinskii, Pisarev, and Chernyshevsky, and selected writings of the Decembrists, Herzen, Bakunin, Tkachev, and Lenin. The student will write an extended essay on a topic of his/her choice. (Limited enrollment. Preference will be given to those students who have some background in Russian history.)

135Q • Problems in the History of the Russian Revolution (4) [E1]

Prerequisite: History 135C or consent of instructor.

A study of the various aspects and various interpretations of the Russian Revolution, 1917-1921. A consideration of the questions concerning the nature of historical inquiry in general. Students will write papers based on investigation of topics of their own choosing. This course will satisfy the History 195 requirement for majors. Enrollment limited to 15 students.

137A—B • The Origins of Contemporary France (4-4) Talbott [E1]

Transformation of a tradition-bound rural society into a leading industrial power, 1815 to the present. *Usually offered in fall/winter sequence.*

137Q • France in the Twentieth Century (4) Talbott [E1]

Enrollment limited to 15 students. Will examine the extent to which French society and politics have undergone a revolutionary transformation since the Second World War (1945 to present). *Offered periodically.*

140A—B • Early Modern Britain (4-4) McGee [E1]

A history of England from the late Middle Ages to the 18th Century. *Usually offered annually in a fall/winter sequence.*

140A(S)—B(S) • Early Modern Britain (1-1) McGee

Prerequisite: Concurrent enrollment in History 140A—B.

A weekly, one-hour section, open to any students who would like to supplement the material of the lecture course with additional readings and discussion. Such students will receive one unit for the discussion section, 140S, or a total of five units for History 140 per quarter.

140Q • Studies in Early Modern British History (4) McGee [E1]

Prerequisite: History 140 or consent of the instructor.

A writing seminar in which emphasis is placed upon the use of primary sources. Limited to twelve students. *Usually offered annually in the spring*

141A • England in the Age of Queen Victoria - the Nineteenth Century (4) Gollin [E1]

141B • From the Death of Queen Victoria to the Battle of Britain - Twentieth Century (4) Gollin [E1]

141H • British Imperial History (4) Huttenback [E1]

A seminar on the British imperial experience from 1763 to the present. Imperial theory, the motivations for territorial expansion and racial factors will be emphasized especially with reference to the histories of India, Africa, Australasia, and Canada.

141Q • Special Studies in Modern English History (1-4) Gollin

Prerequisite: History 141A or History 141B or consent of instructor.

Study of particular topics in modern English history. A research paper will be required.

143 • The Nile Quest (4) Collins [E1]

An examination of African and Victorian societies during the half century in which English explorers sought the source of the Nile. The greatest geographical puzzle of the nineteenth century, the search for the source of the Nile, opened Africa to European partition, imperialism and modernization. *Usually offered annually in winter.*

144 • Imperialism and Resistance in Africa (4) Collins [E1]

An examination of African resistance to European encroachment and colonialism in tropical Africa. *Usually offered annually in fall.*

144C • Imperialism and the British Empire (4) Collins [E1]

An investigation of Imperialism, with examples from the modern British Empire.

145A—B—C • Social, economic, political and intellectual history of the Middle East from the rise of Islam to the present. (4-4-4) Gallagher [E1]

145A • 500 to 1000 A.D. Byzantine and Sassanid Empires.

Expansion of Islamic empire, 1000 to 1500 A.D.

145B • Ottoman, Mongol, and Mameluke Empires.

145C • 1500 to the present.

Savid Iran, the Ottoman middle east and the impact of Western economic and political expansion. Usually offered every other year

146A—B • History of the Middle East in the 19th and 20th Centuries (4-4) [E1]

The Ottoman Empire and the Eastern Question. Reform movements, cultural and national awakening, and the impact of the West in Iran, Turkey and the Arab countries. Evolution of the Middle Eastern states until the present time.

146A usually offered every fall quarter.

146B usually offered every winter quarter.

146Q • Studies in the history of the modern Middle East (1-4) Gallagher

Prerequisites: History 146A or B, or 145C, or consent of instructor.

A weekly seminar on a topic in modern Middle East history. A research paper will be required; may be taken more than once.

147 • Modern African History (4) Johnson [E1]

This is a basic survey course on modern African history in the 19th and 20th centuries, in which the era of colonial rule will be stressed. The emphasis will be on Africa South of the Sahara.

147Q • Special Studies in Africa: Modern African Intellectual History (4) Johnson [E1]

Prerequisite: Limited enrollment, apply to instructor.

Reading knowledge of French recommended but not required. Discussion of topics and books on modern African intellectual and cultural history.

148Q • In Search of Personal and Family History (4) Johnson [E1]

How to collect, analyze, and write personal history within the student's own family or community. Methods of collecting information from written, oral, and visual materials will be studied, and students will write a biography (term paper) on some member of their family or a surrogate family.

149A • West African History (4) Johnson [E1]

Prerequisite: Some familiarity with African subject matter suggested.

Political and cultural leaders of West Africa. Interpretive studies of modern West African political and intellectual leaders with emphasis on resistance to colonial rule, drive for self-government, renaissance of neo-African culture, neo-colonialism, and continuing revolution.

149B • History of South Africa (4) Johnson [E1]

Economic, social and political history of South Africa.

150A—B • Spain and Spanish Empire (4-4) Powell [E1]

Prerequisite: Upper Division standing or permission of instructor.

150A • Medieval Spain, to 1516. *Usually offered annually in fall.*

150B • From 1516 to the present. *Usually offered annually in winter.*

150Q • Special Studies in Spanish History (1-4) Powell

Prerequisite: History 150A or B or consent of instructor.

Reading and discussion on specified topics. May be taken more than once. Enrollment limited. *Usually offered in spring, annually.*

151A—B—C • Hispanic American History (4-4-4) Dutra, Rock [E1]

151A • Colonial background and the winning of independence. Offered every fall.

151B • The causes and course of the struggle for independence in Latin America: caudillismo and dictatorship; the rise of the export economies: foreign investment and intervention, social and political changes of the nineteenth century; special issues during the nineteenth century focussing on Mexico, Brazil, Argentina, Chile, Cuba and Peru. *Offered every winter.*

151C •

A survey of Latin American history in the twentieth century: the crisis of the export economies, the struggle for industrialization, the rise of U.S. hegemony in Latin America; populism and military dictatorship in the post-war period; the Mexican and Cuban revolutions; Vargas, Person, Cardenas, and Allende; a prognosis for Latin America. Offered every spring.

153 • Comparative Seaborne Empires, 1415-1824 (4) Dutra [E1]

Analysis of the similarities and differences between the overseas activities of Portugal, Spain, France, England, and the United Provinces of the Netherlands. *Offered every three years.*

153LP • History of Argentina from Spanish Settlement to the Present Day (4) Rock [E1]

A case study in economic underdevelopment and political instability. Offered periodically winter.

154A—B • Portugal Overseas (4-4) Dutra [E1]

154A • A comparative analysis of Portuguese activity in Africa, Asia, and America, 1415-1825. *Offered every three years.*

154B • The Portuguese in Africa and Asia, 1826 to the present. *Offered every three years.*

155A—B • History of Portugal (4-4) Dutra [E1]

155A • A general survey of Portugal from its origins to 1580 with an emphasis on social, economic, and cultural history. *Offered every other year (alternates with History 157A).*

155B • Modern Portugal. 1580 to the present. *Offered every other year (alternates with History 157B).*

156A—B • History of Mexico (4-4) Powell [E1]

Prerequisite: Upper division standing or permission of instructor.

156A • From Spanish Conquest to the end of the eighteenth century. *Usually offered annually in fall.*

156B • The nineteenth and twentieth centuries. *Usually offered annually in winter.*

156Q • Special Studies in Mexican History (1-4) Powell

Prerequisite: History 156A or B or consent of instructor.

Reading and discussion on specified topics. May be taken more than once. Enrollment limited. *Usually offered in spring, annually.*

157A—B • History of Brazil (4-4) Dutra [E1]

A general survey of the history of Brazil in two quarters:

157A • From the discovery of the New World to the formation of the Empire. *Offered every other year (alternates with History 155A).*

157B • Modern Brazil. *Offered every other year (alternates with History 155B).*

157C • Intellectual History of Brazil: Modern Period (4) Dutra [E1]

Focuses on the impact of intellectuals and ideas on Brazilian society in the 19th and 20th centuries

158 • The Great Revolutions of Latin America (4) Rock [E1]

A survey of great revolutionary movements in Latin America—the Spanish Conquest, the struggle for independence in the early nineteenth century, the Mexican and Cuban revolutions of the twentieth century, with commentaries on contemporary counter-revolutionary movements in Brazil, Chile, and Argentina. Designed as introduction to Latin American history.

159A—B • Women in American History (4-4) Cohen [E1]

A social history of women in America, investigating changing patterns of marriage, reproduction, and work, as well as cultural values about the female role, with attention to differences of race, class, and ethnic background; and analysis of feminist thought and the several women's movements. *Usually offered annually, in the fall/winter quarter.*

159E • American Social History, 17th to 19th centuries (4) Cohen [E1]

The evolution of American society from colonial settlement to early industrialization, with analysis of social institutions (family, church, polity), relationships (sex, class, race, ethnicity), and

processes (community integration and stability, disorder and control, and social mobility). *Usually offered biannually, no set quarter.*

159Q • Special Studies in Women's History (4) Cohen [E1]

Prerequisite: History 159 or consent of instructor.

The study of special topics in the history of women in the United States. *Offered periodically.*

160A • The American South to 1865 (4) Harris [E1]

The origins and development of distinctive economic, social, political, and cultural patterns in the ante-bellum South. *Usually offered annually in fall.*

160B • The American South, 1865 to the Present (4) Harris [E1]

Change and resistance to change in Southern economic, social, political, and cultural life since the Civil War. *Usually offered annually in winter.*

161 • Colonial and Revolutionary America (4) Jacobs, Cohen [E1]

America from early settlement to the American Revolution, with emphasis on the political, cultural, and socio-economic history of the peoples of early America. *Usually offered annually, in the fall.*

162A—B • The United States: The New Nation (4-4) Borden [E1]

Prerequisite: History 17A—B, an equivalent course, or consent of the instructor.

History of the United States from the close of the American Revolution to the Era of Good Feelings, with emphasis on the creation of a federal government, the rise of political parties, and the emergence of national character.

162A usually offered each fall.

162B usually offered each winter.

162Q • Jewish-American History, 1776-1876 (4) Borden [E1]

Prerequisite: Consent of instructor required

Seminar in the development of religious freedom for Jews and other non-Protestants in America, 1776-1876. Political and constitutional issues.

164A • Comparative Slave Societies (4) Bonadio [E1]

164C • Civil War and Reconstruction (4) Bonadio [E1]

Prerequisite: History 17A—B, an equivalent course, or consent of instructor.

A history of the United States during the second half of the 19th century. Emphasis is placed on the causes of the Civil War, the outstanding developments of the war itself, and the major consequences of the reconstruction period

164I • American Immigration (4) Bonadio [E1]

A survey of American immigration in the 19th and 20th centuries. Treats primarily immigration from Europe, the European background to immigration, the immigrants' American experience, and American immigration policy, both past and present.

165 • America in the Gilded Age, 1876-1900 (4) Harris [E1]

The responses of American people and institu-

tions to the opportunities and problems of industrialization and rapid social change in the late nineteenth century. *Usually offered biannually, term varies.*

166A—B • Recent History of the United States (4-4) Graham [E1]

Prerequisite: History 17A—B, an equivalent course, or consent of the instructor.

Political, economic, and social development of the United States from 1900 to the present time. *Usually offered annually.*

166Q • Special Studies in 20th Century History (4) Graham [E1]

Prerequisite: Consent of the instructor.

A seminar for students who have completed History 166A—B and who wish to pursue independent inquiry into some aspect of 20th century American history.

167A • Rise of the American Marketplace (4) Brownlee [E1]

American economic development to the Civil War, including the dynamics of European colonial expansion, the impact of mercantilism and the Revolution, the growth and redistribution of population, and the sources of early industrialization. *Usually offered annually in the fall.*

167B • Development of American Industrial Society, 1860—present (4) Brownlee [E1]

Economic and social history of the United States associated with the continuing industrial transformation of the nation, emphasizing a dynamic population and the changing organizational basis of industrial society, including the development of the modern corporation and the welfare state. *Usually offered annually in the winter.*

167C • History of American Labor (4) Brownlee, Garcia [E1]

An economic and social history of American labor, 1607-present, treating patterns of economic and social opportunity, the structure and composition of the labor force (including the role of ethnic and racial minorities, women, and children), and the character of organized labor movements. *Offered irregularly.*

168A—B • History of the Chicanos (4-4) Garcia [E2]

The history of the Chicanos, 1821 to the present; traces the social-cultural lifeline of the Mexicans who have lived north of Mexico.

168Q • Special Studies in Chicano History (4) Garcia [E2]

Studies in selected aspects of Chicano history with an emphasis on social and economic history.

169A—B • Afro-American History (4-4) Daniels [E1]

169A • History of Afro-Americans from Africa in ancient times to the U.S. in the mid-nineteenth century.

169B • History of Afro-Americans from emancipation to the present. Satisfies American History and Institutions requirement.

169M • History of Afro-American Thought (4) [E1]

Study of the development of Afro-American thought from the 1860's to the 1960's as reflected in intellectual and popular media.

169Q • Selected Studies in Afro-American History (4) [E1]

Prerequisite: History 169A and B, or consent of instructor.

Studies of selected themes in nineteenth and twentieth century Afro-American history, such as, the Afro-American response to national reform movements. A reading and discussion course with limited enrollment.

171A—B • History of the Foreign Relations of the United States (4-4) DeConde [E1]

Prerequisite: History 17A—B, an equivalent course, or consent of the instructor.

171A • The theory and practice of American foreign policy from colonial times to 1900. *Usually offered each fall.*

171B • Analysis of twentieth-century developments. Emphasis on broad policy, concepts and ideas. *Usually offered each winter.*

171Q • Readings and Discussions on Cold War History (4) DeConde [E1]

The course will revolve around books and essays concerning the theory and practice of American foreign policy toward the Communist bloc during the era of the cold war, or approximately from 1945 to 1976. Although some written work is required, emphasis will be on dialogue between students and with the instructor. Limited enrollment.

172A—B • Politics and Public Policy in the United States (4-4) Kelley [E1]

The interaction of politics and public policy from the Revolution to the present, focusing upon the key issues of each era in social, economic, cultural, racial, and other policy areas. A particular concern for the policy-making process, ideology, and the cultural origins of politics.

172QL • Public Policy Issues in the 1960s (4) Kelley [E1]

Prerequisite: History 172AB, Politics and Public Policy in the United States

A research seminar utilizing team research methods to explore major policy questions in the Kennedy-Johnson-Nixon era

173A—B • American Intellectual History (4-4) Kelley, Nash [E1]

Prerequisite: History 17A—B, an equivalent course, or consent of instructor.

The evolution of the principal systems of thought concerning God, nature, humanity and society from the colonial period to the present. The course will divide at the Civil War. *Usually offered biannually in the winter and spring terms.*

173C • American Environmental History (4) Nash [E1]

Traces three centuries of changing American attitudes toward the natural environment with an emphasis on the rise of the conservation movement. *Usually offered annually in spring.*

173S • American Popular Cultural History (4) Nash [E1]

Traces the origins and development of popular culture in modern industrial America, 1860 to the

present. Emphasis is on the ideas, attitudes and values reflected in mass entertainment media such as popular literature, motion pictures, radio, television and popular music. *Usually offered annually in fall.*

173T • Wilderness and Man: History, Meaning, and Management (4) Nash [E1]

The significance of wilderness in world history with an emphasis on man's relation to it both aesthetically and economically. The perspective will be international, although the American experience is the central concern. Special attention to the problems of preserving wilderness in modern civilization and to the future of wild country. Case studies and audiovisual techniques will be an important part of the course as will a wilderness field trip. *Usually offered annually in winter.*

174A—B • The Machine in America (4-4) Pursell [E1]

Social history of devices and techniques, from handicraft through mass-production to automation; invention, innovation, scientific research, and organization in such areas as agriculture, manufactures, transportation, warfare, and the urban environment. *Offered annually in fall-winter or winter-spring sequence.*

174C • Social History of American Science (4) Pursell [E1]

The social role of science and scientists in America from the Puritans to the present. Emphasis on social behavior, institutions, public policy and the interrelations of the scientific culture with the larger American context. *Offered infrequently.*

174D • History of the Military-Industrial Complex (4) Pursell [E1]

The history of American business, the military profession, and their relations with civilian government from the Early Republic to the present. *Offered infrequently.*

174Q • Studies in the History of American Technology (1-4) Pursell [E1]

Prerequisite: History 174A—B, or permission of instructor.

A reading and discussion course, with a limited enrollment. *Offered infrequently.*

175A—B • American Cultural History (4-4) Kirker [E1]

The origin and development of a national character and culture since 1607; emphasis is upon the use of artifactual evidence, such as architecture, painting, and literature, in formulating historical interpretations regarding the American character and culture. *Usually offered annually.*

175D • Building America: History as Revealed through Architecture (4) Kirker [E1]

Prerequisites: College level or equivalent course in American history.

Traces the colonial character of our culture as evidenced in the transformation of European building forms and styles to the emergence of a native architecture of worldwide influence. Emphasis is on the way California architecture parallels or diverges from national or international building traditions. *Usually offered annually.*

175Q • Topics in American Cultural History (4) Kirker [E1]

Prerequisite: American Cultural History (History 175A, B, or C).

A research seminar on the use of artifacts in American cultural history.

176A—B • The American West (4-4) Oglesby [E1]

Prerequisite: History 17A—B, an equivalent course, or consent of the instructor.

The West as a frontier and as a region, in transit from the Atlantic seaboard to the Pacific, and from the seventeenth century to the present.

176Q • Special Studies in the History of the American West (4) Oglesby [E1]

Prerequisite: History 176A—B or consent of instructor.

The study of special topics in the history of the American West. Enrollment is limited.

177 • History of California (4) Oglesby [E1]

California as a case study of national trends, and as a unique setting with its special problems and culture.

177Q • Special Studies in California History (4) Oglesby [E1]

Prerequisite: History 177 or consent of instructor.

A reading and discussion course limited in enrollment. A research paper will be required.

178A—B • American Urban History (4-4) Callow [E1]

Prerequisite: History 17A—B, an equivalent course, or consent of instructor.

A study of the political, economic, social and intellectual impact of the city upon American history, and the impact of history upon the growth of American urbanization.

178K • Special Studies in the History of Crime in the Cities of the United States (4) Callow [E1]

A reading, discussion, and research course in the history of organized and unorganized crime in the American city. Limited to ten students.

178M • History of American Urban Crime (4) Callow [E1]

History of the evolution of American urban crime, organized and unorganized, with attention to the roles played by urbanization, the gang, the police, the courts, the political boss and his machine.

178Q • Studies in American Urban History (4) Callow [E1]

Prerequisite: History 178A—B or consent of the instructor.

A reading and discussion course limited in size to ten students.

179Q • The Native American Indian and the Frontier: Ideas and Interpretations (4) Jacobs [E1]

The role of the American Indian in United States history. A study of historical thought and interpretation concerning main currents of national development and the origins of American attitudes and policies toward America's native people. A reading and discussion course. *Usually offered winter and spring quarters.*

179S • Films, Historic Paintings, Prints & Photographs in American and in Frontier History (4) Jacobs [E1]

An examination of the visual record of the American past which provides a new and sometimes unique interpretation of American history.

179T • Historical Preservation in America, Problems & Case Studies (4) Jacobs [E1]

The historical record of America's past: what we had, what we lost, and what we have preserved. Problems and case studies of history as told in the physical record of the territorial occupation of the U.S.

180 • Southeast Asian History (4) [E1]

A survey of the history of the countries of South-east Asia (Burma, Thailand, Malaysia, Vietnam, Indonesia, the Philippines, Cambodia, and Laos). A research paper will be required. Not for pass-fail students.

183 • Gandhi and Modern India (4) Hay [E1]

The development and influence of Gandhi's ideas and methods in the contexts of Indo-British cultural and political life, Hindu-Muslim, inter-regional, and inter-caste tensions, and the creation of independent India and Pakistan. The contemporary relevance of Gandhi's principles and programs.

184A—B—C • China's Major Dynasties (4-4-4) Chen [E1]

A • Han Dynasty China **B •** T'ang Dynasty China **C •** Sung Dynasty China

In depth study of the history of some important Chinese dynasties. *Offered periodically.*

185A—B • Modern China (4-4) Hsu [E1]

185A • From 1600 to 1900. *Usually offered annually.*

185B • From 1900 to date. *Usually offered annually.*

186A—B—C • History of China (4-4-4) Chen [E1]

186A • Ancient China, to A.D. 200. *Usually offered biannually in fall.*

186B • Medieval China, A.D. 200-1000. *Usually offered biannually in winter.*

186C • Early Modern China, A.D. 1000-1600. *Usually offered biannually in spring.*

187A • Traditional Japan (4) Smith [E1]

A historical survey of Japanese culture and political institutions until the eighteenth century, with special emphasis on the way in which Japan borrowed heavily from Chinese culture while at the same time cultivating a distinctive Japanese identity. *Normally offered every other year.*

187B • Modern Japan (4) Smith [E1]

A survey history of Japan from the early nineteenth century until World War II. In an effort to explain how—and at what price—Japan became the first successful modernizer in the non-Western world. *Normally offered in spring quarter.*

188Q • The Road to Pearl Harbor (4) Smith [E1]

Prerequisite: Consent of instructor.

A reading and research seminar on the causes of the Pacific War. No language requirement. *Normally offered every other year, alternating with History 189O.*

189Q • The City in East Asian Perspective (4) Smith [E1]

Prerequisite: Consent of instructor.

A reading and research seminar for anyone interested in cities, from their primitive origins to their present problems. The hope is to examine critically our current Western conceptions of cities in the light of the vast and neglected urban tradition of China and Japan. *Normally offered every other year, alternating with History 188O.*

190A • China's Social and Institutional History (4) Chen [E1]

A study of China's changing society, in pre-imperial, imperial, late imperial, and modern eras and its relationship with some important institutions such as land tenure, education and examination system, central and local government organization, ancestor-cult and clan. *Offered periodically.*

190B • Problems in Chinese History (4) Chen [E1]

Studies on selected topics of traditional China. Offered irregularly.

190C • History of Chinese Thought (4) Chen [E1]

A study of the development of Chinese thought from Confucius to Mao Tse-tung. *Offered periodically.*

191 • Public History (4) Johnson [E1]

Topical history course to explore the new field of Public History, heretofore limited to graduate students. Course will explore different sectors of Public History which include preservation, government, business, research organizations, media, historical societies and museums, archives & teaching of Public History. (Original case studies & reading materials will be prepared since at present no textbook exists.)

191E • Community and Family History (4) Johnson [E1]

This course will provide practical instruction for students interested in researching and writing the history of their community, neighborhood, or family. A survey of conceptual and methodological writings will be combined with research and writing case studies and assignments.

192 • Truth and Fiction: a Century of German History in Literature (4) Remak, Exner [D]

Prerequisite: Upper Division course in modern Europe or in German literature.

German history, 1870-1971, as reflected in German literature. (Tentative list of authors to be read. Fontane, Grillparzer, George, Hofmannsthal, Roth, Plievier, Brecht, Hochhuth, Johnson.)

193A • Twentieth-Century Germany: Kaiser to Hitler (4) Remak [E1]

A political and cultural history of Germany from the turn of the century to 1933; the roots of National Socialism.

193B • Twentieth Century Germany: The Nazi Years (4) Remak [E1]

A history of Germany from the rise of Hitler to the capitulation of 1945, and of the public and private face of National Socialism—its origins, its ideology, and its practices.

193Q • Studies in Twentieth Century Germany (4) Remak [E1]

Prerequisite: History 193A—B; permission of instructor.

An undergraduate seminar to explore in greater depth some of the problems—both general and specific—of modern German history.

195E—AM—LA—AS—AF • The Methods of History (4) The Staff

Prerequisite: Upper Division major in history or consent of the instructor. **E • Europe; AM • America; LA • Latin America; AS • Asia; AF • Africa.**

Required of all history majors but may be waived for students who have taken Q courses requiring a major paper. (Q course instructors petition to have the 195 requirement waived for students in their courses.) A research seminar which trains the students in historical research methods. The seminar will generally concentrate in the area of the instructor's main field of interest and a research paper will be written. May be taken more than once. *Usually offered quarterly.*

195H • Senior Honors Seminar (4-4-4) Staff

Prerequisite: Admission to senior honors program (see requirements under History, Undergraduate Honors)

A three-quarter seminar, to be conducted as outlined in the description of the Senior Honors Program. Honors candidates will write a senior thesis on a research topic of suitable depth and sophistication. 12 units of credit will be awarded at the end of the 3 quarters of the seminar. If a student is unable to complete the 3 quarters of seminar—a maximum of 4 units of credit will be given.

196 • Internship in History (2-8) Staff

This course enables students to obtain credit for history-related internship experience, such as in the Capitol Hill or Sacramento programs. The course is graded P/NP and must be taken in conjunction with a History 199, for which a written project related to the internship experience must be completed. May not be repeated.

***199 • Independent Studies** (1-5) The Staff
Student must have upper division status with 3.0 grade point average, and must be a major in history or present justification to both the instructor and the department for diverting from this norm. A maximum of 15 units will be allowed during the undergraduate course of study. The description of any one 199 must not be identical to any existing course description.

Graduate courses

The following are one-quarter seminars:

*See N-2 for 198/199 independent studies unit limitations.

200E—AM—LA—AS—AF • Historical Literature (4) Staff E • Europe; AM • America; LA • Latin America; AS • Asia; AF • Africa.

A reading course in a general field of history, within which the professor's specialization lies. Introduces the student to the sources and general literature of the field in question. Particularly designed to meet the needs of M.A. candidates as well as those Ph.D. candidates seeking broad preparation. Written work as prescribed by the instructor. May be taken more than once. *Usually offered quarterly.*

201E—AM—LA—AS—AF • Advanced Historical Literature (4) Staff E • Europe; AM • America; LA • Latin America; AS • Asia; AF • Africa.

A reading course in a field of the professor's specialty. Introduces the student to the sources and literature of the field in question. Written work as prescribed by the instructor. May be taken more than once. Open to both M.A. and Ph.D. candidates. *Usually offered quarterly.*

202 • European Historiography (4)

The nature of history and historical writing as revealed by the major historians of European civilization since the Greeks.

203 • Research Seminar in American Historiography (4) Jacobs

Emphasis is on the writings of the great chronicles of American history. One research paper is prepared.

206 • Land Use Planning and American Intergovernmental Relations (4) Graham

This course will examine land use planning in America from the beginning of zoning to the present "quiet revolution" in land-use controls. Essential background will be the history of recent (20th century) changes in intergovernmental relations within the American federalist system. *Usually offered annually.*

207 • Historical Methods and the Social Sciences (4) Brownlee, Harris

Exploration of the application of social science theory and methodology, including quantitative analysis, to the historical study of social structure and mobility, demographic change, distribution of political power, voting behavior, legislative behavior, interaction of public policy and economic development and distribution of income and wealth. This is a one quarter course. *Usually offered annually in the fall.*

208 • Problems of Historical Preservation (4) Jacobs, Oglesby

Prerequisite: Graduate standing

Problems of historical preservation using archives, museums, and historic sites and buildings of the Santa Barbara area as a laboratory.

231 • Seminar in Modern French History (4)

236 • Seminar in Southeast European History (4) Djordjevic

Usually offered annually.

244 • Seminar in Ancient Near East and Intellectual History (4)

Prerequisite: Reading knowledge of French or German.

Problems in the development of man's intellec-

tual response to his environment in the Ancient Near East. This is a one-quarter seminar.

246 • Seminar in the Modern History of the Middle East (4) Haddad

Prerequisite: History 146A or 146B.

Research seminar stressing the movements of nationalism, revolution and change that have characterized the modern history of the Middle East since 1850. *Offered annually or biannually in the spring.*

281 • Politics and Culture in the Gandhian Era (4) Hay

Prerequisite: History 181A—B.

A research seminar devoted to the period 1919-1948 in the history of India and Pakistan.

284 • Seminar in the History of Chinese Thought (4) Chen

Prerequisite: History 19 or 186A—B, or permission of instructor

Selected studies of leading thinkers on important schools of thought. This is a one-quarter course.

286 • Seminar in Pre-Modern Chinese History (4) Chen

Prerequisites: History 86 or 87, or 186A—B—C, or consent of instructor.

Research on special topics of ancient, medieval or early modern China.

295 • The Art of Teaching History (2) Staff

Prerequisites: Graduate standing - admission to Ph.D. program or M.A. destined for post secondary teaching.

A seminar course on the art and methods of teaching history including practical experience in the classroom. Audiovisual aids will be used in evaluating teaching techniques. Graduate students who wish to become teaching assistants are strongly advised to take this course.

The following are two-quarter seminars.

204 • Historiography and Philosophy of History (8) Marsak

The nature of history and historical writing as revealed by major European and American historians followed by a consideration of theories of historical inquiry—metaphysics, methodology, meaning and morality of history.

205 • Public Historical Studies (8) Johnson, Kelley

Prerequisite: Admission to Graduate Program in Public Historical Studies or permission of instructor.

To acquaint students with relevant research methods (oral history, legal research, family history, government documents and sources, historical preservation, field research).

211 • Seminar in Greek History (8) Frost

Prerequisite: Reading knowledge of French, German or Italian.

Research seminar in Greek history. From time to time the seminar will be limited to candidates specializing in ancient history, and with a reading knowledge of Classical Greek.

213 • Seminar in Roman History (8) Drake

Prerequisite: Reading knowledge of appropriate foreign language.

Selected topics in the history of the Roman Republic and Empire, with particular emphasis on problems of the Later Roman Empire.

215 • Seminar in Medieval History (8) Hollister

Prerequisite: History 116 • Medieval Europe, 1050-1350.

220 • Seminar in Renaissance-Reformation (8) Friesen

Prerequisite: Reading knowledge of one Western European language besides English.

Research seminar, stressing problems in comparative European social and intellectual history, 1450-1650. *Offered periodically.*

222 • Seminar in 18th Century European History (8)

Prerequisite: Graduate standing or permission of professor.

Selected topics in the history of Europe, 1715—1815.

223 • Seminar in Modern European History (8) Remak

Prerequisite: Graduate standing.

May be taken more than once.

225 • Topics in the European Enlightenment (8) Marsak

Prerequisites: A reading knowledge of at least one foreign language.

Science and social philosophy, 1650—1850.

227 • Research Seminar in European Socialism, 19th and 20th Centuries (8) Lindemann

Offered irregularly.

229 • Seminar in 17th Century European History Sonnino

235 • Seminar in Russian History (8) McClelland

Prerequisite: Reading knowledge of Russian, German or French, or consent of the instructor.

237 • Seminar in Modern German History (8) Remak

240 • Seminar in Tudor-Stuart History (8) McGee

Research seminar in Tudor-Stuart history: selected topics requiring use and interpretation of primary sources. *Offered infrequently.*

241 • Seminar in Modern British History (8) Gollin

Research seminar. *Usually offered in fall and winter quarters.*

242 • Seminar in Early 20th Century British History (8)

248 • Research Seminar in African History (8) Collins, Johnson

Prerequisite: History 201.

History 248 is designed to provide the graduate student with the opportunity to explore in depth one or more of the subjects with which he has become acquainted in History 201. *Usually offered annually in fall-winter.*

250 • Seminar in Spain and Spanish Empire (8) Powell

Prerequisites: Graduate standing or permission of professor; reading knowledge of Spanish.

252 • Seminar in Social and Intellectual History of Modern Latin America (8)

Prerequisites: History 201; History 151B—C, History 152B or permission of instructor.

Seminar on nationalism in Latin America.

253 • Special Seminar in Latin American History (8) Rock

Discussion meetings for post-graduates. Reading, research and writing in the history of Latin America in subject of student's choice. Available on demand

254 • Latin America, Spain and Portugal (8) Powell, Dutra

Prerequisites: Reading knowledge of Spanish or Portuguese required (in special cases, French, German, Dutch, or Italian acceptable).

Individual reading, research, and writing in the history of Spain, Portugal, and their Empires in The Americas, Africa, and Asia. For Brazil and Mexico, national periods included.

256 • Seminar in Mexican History (8) Powell

Prerequisites: Graduate standing or permission of professor; reading knowledge of Spanish.

257 • Seminar in Luso-Brazilian History (8) Dutra

Research seminar with particular stress on Portuguese, Spanish and Brazilian archival materials. Course will provide the graduate student with opportunity to analyze problems in the history of Portugal and her overseas empire with special emphasis on Brazil.

259 • Seminar in American Social History (8) Cohen**260 • Seminar in American South** (8) Harris

Research in 19th and 20th century Southern history.

261 • Seminar in Colonial America, the Frontier, and the Indian (8) Jacobs.

Usually offered in fall and winter quarters.

262 • Seminar in Early National Period of United States History (8) Borden**263 • American Immigration** (8) Bonadio

A research seminar in the history of American immigration, particularly during the nineteenth and early twentieth centuries.

264 • Seminar in Civil War and Reconstruction (8) Bonadio**265 • Seminar in American Political and Social History** (8) Harris

Research in selected historical problems, focusing on analysis of political behavior, social structure, and social mobility. *Usually offered biannually in winter and spring.*

266 • Seminar in Recent History of the United States (8) Graham

Offered periodically.

267 • Seminar in American Economic History (8) Brownlee

Usually offered annually in winter-spring.

269 • Seminar in American Urban History (8) Callow**271 • Seminar in Diplomatic and Political History of the United States** (8) DeConde

Usually offered annually winter and spring quarters.

272 • The History of American Public Policy (8) Kelley

Prerequisite: History 172A-B or consent of instructor.

Since the Civil War. By means of case studies, explores the policy-making process; examines links to party ideology and cultural influences; and compares original policy intentions with actual results following implementation.

273 • Research Seminar in American Social & Intellectual History (8) Nash

Offered periodically.

274 • History of Science and Technology in America (8) Pursell

Prerequisite: Consent of the instructor.

Research seminar emphasizing the social aspects of selected topics in the history of science and technology in America. *Offered irregularly.*

275 • American Cultural History (8) Kirker

Offered infrequently.

276 • Seminar in American West and California (8) Oglesby**277 • Topics in the History of Science** (8) Badash

Research seminar selected from such topics as Babylonian astronomy, Greek science, Age of Newton, rise of modern physics, scientific instruments, nationalism/internationalism in science, science and society, sociology of science, public conceptions of science, organization and profession of science. *Offered periodically.*

278 • Science in Twentieth Century America (8) Badash

The atomic age—the background to the atomic bomb, its development, use and postwar problems. *Offered periodically.*

280 • Seminar in Modern China (8) Hsu

Prerequisite: History 185A—B.

A research seminar in the important aspects of modern Chinese history. *Offered annually.*

285 • Seminar in United States Relations with the Far East (8) Hsu

Prerequisite: History 185A—B, or 187A—B.

A research seminar, with particular stress on the use of archival materials. The role of the United States in the development of the Modern Far East is emphasized. *Offered irregularly.*

288 • Seminar in Japanese History (8) Smith

Prerequisite: Consent of instructor

A research seminar on selected problems in Japanese history. Some working knowledge of the Japanese language desirable but not necessary

297 • Laboratory for Teaching Assistants (2) Staff

Subject oriented, designed to relate directly to the teaching of a particular course in progress, to improve the skills and effectiveness of the department's teaching assistants. Units earned in this course, which is required of all graduate students teaching in either Hist 4 or Hist 17, do not apply toward completion of the Ph.D. requirement.

Reserved for advanced study and research.**596 • Directed Reading and Research** (2-6) Staff

Prerequisite: Graduate standing and consent of the instructor.

Individual tutorial. Instructor usually student's major professor. Minimum of two units per quarter. Each faculty member has a unique letter designation, which is the same as in the 599 series.

597 • Independent study for Master's Comprehensive Examinations and Ph.D. Examinations (1-12) Staff**598 • Master's Thesis Research & Preparation** (2-8) Staff

Prerequisite: Graduate standing and consent of the instructor.

Only for research underlying the thesis, writing the thesis. Instructor should be the chairman of the student's thesis committee.

Each faculty member has a unique letter designation, which is the same as in the 599 series.

599AA—599ZZ • Ph.D. Dissertation Preparation (2-6) Staff

Prerequisite: Graduate standing and consent of the instructor.

Only for writing the dissertation. Instructor should be the chairman of the student's doctoral committee. Each faculty member has a unique letter designation as follows:

MB Morton Borden; RC Robert O. Collins; AD Alexander DeConde; DD Dimitrije Djordjevic; AG Alfred M. Gollin; GH George N. Haddad; WH C. Warren Hollister; IH Immanuel C. Y. Hsu; WJ Wilbur R. Jacobs; RK Robert L. Kelley; HK Harold Kirker; LM Leonard Marsak; PP Philip W. Powell; JR Joachim Remak; FB F. A. Bonadio; AC Alexander B. Callow; FF Frank J. Frost; OG Otis L. Graham; SH Stephen N. Hay; RN Roderick W. Nash; RO Richard E. Oglesby; CP Carroll Pursell; PS Paul M. Sonnino; LB Lawrence Badash; EB W. Elliot Brownlee; CC Chi-Yun Chen; FD Francis A. Dutra; AF Abraham Friesen; CH Carl V. Harris; JT John E. Talbott; SM J. Sears McGee; HD Harold A. Drake; GJ G. Wesley Johnson; HS Henry D. Smith; MG Mario Garcia; AL Albert Lindemann; DR David Rock; PC Patricia C. Cohen; DD Douglas Daniels; NG Nancy Gallagher B R Jeffrey B. Russell

Interdisciplinary Courses

Interdisciplinary 1 • Library Skills (1)

Course designed to assist entering students in learning to use effectively essential facilities and resources of the UCSB Library. Course is self-paced and does not meet regularly. Students must satisfactorily complete workbook and pass final exam.

Interdisciplinary 15A—B • Energy in the Modern World (3-3) [B2]

Prerequisites: 15A is prerequisite to 15B

An overview of the scientific and economic aspects of the energy problem in the United States. The basic physics of energy - its generation, conversion, and distribution - will be interleaved with the basic economics necessary to understand the factors involved in the formulation of policy. This course will be taught jointly by the Departments of Economics and Physics.

Interdisciplinary 100 • Library Research Bibliography I (2)

The goal is to develop a high level of library competence. A critically annotated and exten-

sive bibliography is a central course requirement. The course is recommended for students concurrently registered in any course which has a research project requirement. (Available P/NP only; may not be repeated for credit.)

Interdisciplinary 101 • The Animal in Primitive and Ancient Art (3) Davenport [D]

Prerequisite: Upper Division status.

A melange of natural history, anthropology, mythology, and art, approaching the subject from the point of view of the naturalist. Emphasis is placed on the relation of animals to man as seen in the art of primitive non-western societies and of the west from the Paleolithic to the rise of classical humanism. (W)

Interdisciplinary 110 • Information Resources in the Sciences and Engineering (2)

Literature of science and engineering. Information storage and retrieval theory, systems, and applications. Abstracting and indexing concepts. Applications of computer data base systems.

See also:

African Area Studies 100 • Africa: an Introductory Survey

See listing under African Area Studies

Medieval Studies 100 • Aspects of Medieval Civilization

See listing under Medieval Studies.

Medieval Studies 199 • Independent Studies in Medieval Studies

See listing under Medieval Studies.

Renaissance Studies 100 • Medici Florence

See listing under Renaissance Studies.

Renaissance Studies 199 • Independent Studies in Renaissance Studies

See listing under Renaissance Studies.

Law and Society

Advisory Committee

Stanley Anderson, Ph.D., *Political Science*
 Gayle Binion, Ph.D., *Political Science (Chairperson)*.
 Alexander Callow, Ph.D., *History*.
 Donald Cressey, Ph.D., *Sociology*.
 Herbert Fingarette, Ph.D., *Philosophy*.
 Mattison Mines, Ph.D. *Anthropology*
 Thomas S. Schrock, Ph.D., *Political Science*.
 Harold L. Votey, Jr., Ph.D., *Economics*.

Concerns of the program

Law and Society seeks to understand the nature of law and legal institutions from a variety of perspectives. The major is interdisciplinary, drawing on courses in law and legally related topics offered by the Departments of Philosophy, Political Science, and Sociology, as well as relevant courses from other departments. It is designed to benefit both the student who desires a liberal education and the student who intends to enter graduate or law school.

In addition to the basic major, the program offers an emphasis in Criminal Justice. The emphasis stresses the study of criminal justice as a social science and is designed to provide a grounding in the field for the student who intends a career or graduate study. It is not a vocational program and does not provide technical skills of the kind that can be developed by vocational education or inservice training. The Criminal Justice emphasis is sup-

plemental to, and not a substitute for, the basic major and requires an additional 12 units of upper division course work. Successful candidates will have the emphasis noted on their transcripts and recognized on their diplomas.

Departmental advising and publications

The Law and Society counselor is available to assist students on a regular basis. The counseling office is 3829 Ellison Hall. Students are advised to check the office hours posted at this location.

Bachelor of Arts—Law and Society

Preparation for the Major

Core Course Requirements: Philosophy 3, Political Science 12 *or* 100 *or* both 5 and 10, Sociology 1 *or* 101 and Law and Society 1.

Elective Requirements— *Three courses from the following:* Anthropology 2 *or* 101, Economics, 1, 2, *or* 109, Environmental Studies 11, History 4A, 4B, 4C (This series is strongly recommended), 17A, 17B, 17C, Philosophy 20A, 20B, 20C, Political Science 25, 1A (1B, 1C recommended but not required), Psychology 1 *or* 101, and Sociology 3.

Upper Division Major

48 upper division units including the following requirements:

Core Course Requirements: Philosophy 100A, Political Science 115, Sociology 173, and Law and Society 190.

Component Course Requirements: *Six of the following nine courses with at least one course from each group.*

Group 1: Philosophy 192, 193, and Political Science 117.

Group 2: Political Science 165, 166, 167, and 168.

Group 3: Sociology 172, 174, and 175.

Elective Requirements: *Two courses from the following:* Anthropology 115, Economics 118A,B,C, 160, Environmental Studies 125, History 163C, 163D, 163E, 163F, 163G, 163H, 178K, 178M, Law and Society 100, 192, 194, 199, Political Science 125, 181, 190J, Psychology 103, Sociology 170, 171, Speech 159, or any course from the Component Course Requirement not used to satisfy that requirement.

Bachelor of Arts—Law and Society (Criminal Justice emphasis)

Core Course Requirements: Same as for the basic major.

Cognate Requirements: Both Economics 1 and 2 *or* 109, and Psychology 1 *or* 101, and Sociology 3.

Upper Division

60 upper division units including the following requirements.

Core Course Requirements: Same as for the basic major.

Component Course Requirements: Philosophy 193, Political Science 167, Sociology 172, 175, and two courses from the following: Philosophy 192, Political Science 117, 165, 166, 168 and Sociology 174.

Additional Emphasis Requirements: Economics 160, Political Science 181, Psychology 103, and Sociology 170, 171.

Teaching credentials

Students who complete a major in Law and Society may be eligible to pursue a California teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180 Phelps Hall.

Certain majors may require students contemplating a teaching career to complete specified courses within the major. These course requirements should be satisfied within the bachelor's degree program and prior to formal admission to the credential program. Consult with designated counselors in the Law and Society program for further information.

Career opportunities

A number of careers and professional programs are open to Law and Society majors. Programs open to the student range from graduate study in the social sciences and Criminal Justice to specific professional degree programs such as judicial administration and management, paraprofessional legal training and law school. Graduates of the major have gone into careers ranging from urban planning, court management, probation and counseling and legal practice, to federal, state, and local government service.

Correspondence information

Program Coordinator, Law and Society Major, University of California Santa Barbara, Santa Barbara, California 93106. Phone: (805) 961-4192 or 961-3431.

Law and Society

Lower Division courses

1 • Introduction to Law & Society (4) Binion

An introduction to the interdisciplinary study of the law. Preparation for and introduction to the Law & Society Major. Introduction to the issues, principles and approaches involved in future studies in an interdisciplinary program. The course is a prerequisite for study in the major but it is strongly recommended that students take at least two of the following courses before enrolling in Law and Society 1: Sociology 1 or 101, Political Science 5 or 10 or 12 or 100, Philosophy 3. Students who have not taken two of the above courses must have the consent of the instructor.

Upper Division courses

100 • American Law (4) Anderson [E2]

An introduction to the basic principles and approaches of some of the major substantive areas of American law. Topics covered will include: torts, property, contracts and crimes.

190 • Senior Seminar in Law and Society (4) Staff [E2]

Prerequisite: Sociology 173, Philosophy 100A, Political Science 115, and Senior standing in the Law and Society Major or permission of the instructor.

A seminar on selected topics in Law and Society. A research paper will be required.

192 • Field Research in Law and Society (1-6) Binion

Field research for students who seek greater understanding of the legal system through participant observation in a law related agency. Depending upon the project, students may be required to work up to 20 hours per week and submit a research paper related to their project.

194 • Group Studies (1-4) Staff

Group studies on special topics of importance to Law and Society. The course is designed for advanced Law and Society majors.

*199 • Independent Studies in Law and Society (1-5) Staff

Admission by special permission only. For majors.

No more than 4 units may count toward completion of the major requirements.

*See N2 for 198/199 independent studies unit limitations.

Liberal Studies

Concerns of the Program

The major in Liberal Studies provides students in the College of Letters and Science with an opportunity for interdisciplinary studies by selecting courses in this major from three separate disciplines appropriate to their own unique interests, talents, and academic and career goals. There are no specific courses required for the Liberal Studies major, and its structure is flexible. However, students are urged to consult with a college adviser early in their academic careers for assistance in formulating their objectives within the major and in identifying the courses at UCSB which will best fulfill those goals.

Students who may find this option most attractive and suitable will be those whose interests are broad and eclectic rather than focused upon a single field. Some students may be equally interested in three different disciplines and may use this major to explore these areas simultaneously. Others may have a specific interest in an area of study which crosses departmental lines, such as interpersonal communications, urban studies, or twentieth century arts, and they may use this major as a way of completing courses specific to that area.

Liberal Studies may be of special interest to nontraditional and reentry students since it will allow them to explore a variety of courses in areas of importance to them while permitting maximum programming flexibility.

The educational and career goals of students in the Liberal Studies major will vary. Some students may intend to enter the field of elementary education and will use this major as a way of exploring some of the main disciplines for which they will be responsible in the classroom, while they are completing the Diversified Program required for the Multiple Subject Credential (see **M7**). Others may use the major as a way of preparing for non-technical, professional graduate programs in such fields as journalism, business, social work, and law, provided, of course, that they simultaneously complete any prerequisites for admission to the specific graduate programs of their choice. Still others may simply see this as an excellent way of gaining a liberal education.

As a cautionary note, however, students who intend to pursue graduate studies in a single academic discipline may find that the Liberal Studies major alone will not give them adequate preparation in that subject. They are urged to consult graduate advisers in their proposed fields to determine the prerequisites for admission to the desired graduate programs. In some cases, completion of an en-

tire departmental major in that discipline will be required. In others, students may find that they can fulfill graduate school admission requirements simply by supplementing the Liberal Studies major with additional courses in the proposed field of graduate study.

Bachelor of Arts—Liberal Studies

Preparation for the major:

There are no specific courses required in preparation for the major. However, it is important that students review and complete any prerequisites for those courses which they intend to complete as part of their upper division major and that they discuss their objectives in this major with an academic adviser. Liberal Studies students are required to complete the College and University degree requirements described in sections **H** and **M**, including the General Education Program.

Upper division major:

48 upper division units are required, selected from three departments in the College of Letters and Science in one of the following patterns:

- A) 24 units in one department and 12 units in each of two other departments, *or*
- B) 16 units in each of three departments, *or*
- C) 20 units in one department, 16 units in a second, and 12 units in a third department.

For this purpose, different foreign languages will be considered different "departments." Courses in Military Science and Physical Activities will not be acceptable for this major nor will Anthropology 101, Economics 109, Geology 101, Political Science 100, Psychology 101 or Sociology 101. Normally, no more than 12 of the 48 units may come from courses numbered 192 or above. Courses which are to be applied to the major may not be taken on a P/NP basis.

No formal declaration of emphases or options is required, and none will be recorded on the student's transcript.

Correspondence information:

**Office of the Dean, College of Letters and Science
University of California, Santa Barbara, Santa
Barbara, CA 93106 Phone: (805) 961-2038**

Linguistics

Professor

¹ Arthur Schwartz, Ph.D., *University of Wisconsin; syntax.*

Associate Professors

C. Douglas Johnson, Ph.D., *UC Berkeley; phonology.*

^{1,2} Charles N. Li, Ph.D., *UC Berkeley semantics, historical syntax.*

¹ Jean-Marie Hombert, Ph.D., *UC Berkeley; phonology, phonetics, African languages.*

Lecturer

John Kingston, M.A., *University of Chicago; Phonology, phonetics, neurolinguistics.*

Concerns of the department

A program in Linguistics initiated in 1967-68 offers both undergraduate major and graduate instruction in Linguistics.

Linguistics focuses, principally, on the study of the structure of natural languages, and how this structure—syntactic, phonological, semantic—changes through time. From this empirical study, linguistics attempts to extract properties common to all language structure and structural change, and to develop a theory of general grammar. The study of language with respect to its acquisition and use raises questions pertinent to areas known as socio-linguistics, psycholinguistics, and anthropological linguistics.

Departmental Advising and Publications

Each faculty member is available, unless on leave, for advising and counseling students in regard to major requirements or particular areas of linguistics. Copies of descriptions of the linguistics curriculum and the major requirements are available in the departmental office. Prior to each quarter, descriptions of courses being offered are also available.

Bachelor of Arts

Preparation for the major

Required: Linguistics

20 • Language and linguistics

¹Absent on Leave Fall 1980.

²Absent on Leave Winter 1980.

Upper Division major

Required: 43-44 upper division units in Linguistics, as follows:

110A—B • Introduction to Syntax

111A—B • Introduction to Phonology

113A • Introduction to Semantics

121A—B—C • Field Methods

120A—B • Historical Semitic Linguistics *or* Semitic

120A—B—C • Historical-Comparative Linguistics

In General Education courses, Linguistics recommends: Anthropology 101; Philosophy 108, 100C, 150C, 183, 184, 185; Psychology 101, 127; Sociology 101, 136; Speech 121, 122, 151, 153, foreign language courses.

Graduate program

To date, there is no formal graduate program in linguistics. It is possible to work out a graduate program of interdisciplinary independent study: that is, linguistics in conjunction with another discipline, such as Psychology, Speech, or foreign languages.

Teaching Credentials

A bachelor's degree in Linguistics is an acceptable major for entry into a California teaching credential program. Specific details of State of California and University of California requirements for the various UCSB credential programs are available from the Education-Advising Office of the Graduate School of Education, Room 1180, Phelps Hall.

Career opportunities

The B.A. in Linguistics provides a useful background not only for advanced work in this field, but also for entry into related graduate studies in anthropology, sociology, speech, psychology, philosophy, education, and languages. A certificate in English-as-a-Second-Language may be earned elsewhere with approximately one year's additional study, opening up the possibility of teaching in various domestic and foreign bilingual programs.

Correspondence information

Linguistics Program, South Hall 5607, University of California, Santa Barbara, California 93106. Phone: (805) 961-3776.

Linguistics

Lower Division courses

20 • Language and Linguistics (4) Staff [D]

An introduction to the field and its applications. Synchronic and diachronic linguistics: their goals and methods. Allied fields: psycholinguistics, sociolinguistics. Application of linguistics: speech production and perception; mechanical translation; information retrieval; language learning; etc. (F,W,S)

100 • Languages and Their Speakers (4) Staff [D]

Prerequisite: NONE

The course will explore the grammatical and cultural principles people have learned to become members of various language communities. The languages selected for discussion will be representative of the language families and geographical regions of the world.

Upper Division courses

110A—B • Introduction to Syntax (4-4) Schwartz, Li [D]

An introduction to the description of the syntax of natural languages. (F,W)

111A—B • Introduction to Phonology (4-4) Johnson [D]

Introduction to the description of the sound pattern of natural language. (F,W)

113A—B • Introduction to Semantics (4-4) Li [D]

Prerequisite: Linguistics 110A.

Introduction to semantic description of natural language. Consideration of semantic fields, the role of logic and the underlying structure of language. Investigation of presupposition, entailment, synonymy, etc. (S)

114 • Introduction to Historical Syntax (4) Li [D]

Prerequisite: Linguistics 20 and/or Linguistics 110A.

The course focuses on syntactic change: the nature, the processes, and the causation of syntactic changes. Empirical data will be drawn from a large variety of languages in order to arrive at significant generalizations in historical syntax.

115 • Mathematical Backgrounds for Linguistics (4) Johnson [D]

Deals with mathematical and logical concepts that are fundamental to the formal development of grammatical theory.

120A—B • Historical-Comparative Linguistics (4-4) Johnson [D]

Prerequisite: Linguistics 20 recommended.

An introduction to the methods of reconstruction in historical and comparative linguistics, as exemplified in one language-family. In alternate years, the course will focus on Sino-Tibetan languages and culture. (W,S)

121A—B—C • Field Methods (5-5-5) Hombert, Schwartz, Li [D]

Prerequisites: Linguistics 110A and 111A—B or their equivalent.

Workshop format with native speaker of a non-

Indo-European language as informant. The students will analyze the phonological, syntactic and semantic structure of the language by eliciting data from the informant and applying the theoretical linguistic knowledge to the data. (F,W,S)

125 • Introduction to Acoustic Phonetics (4) Hombert [D]

Prerequisite: None.

This course will cover the following topics: history of acoustic study of speech; acoustic theory of speech; means and goals of acoustic study; the use of acoustic features for speech description; cross-language comparison of acoustic cues. (W)

130 • Language and Culture (4) Staff [D]

An introduction to the study of language in its cultural setting: the effect of culture on the linguistic system, as well as the effect of the system on the culture; language in relation to cognitive categories, both universal and culture-specific; language in relation to social roles (e.g., male, female). (W)

131 • Language and Society (4) Staff [D]

Prerequisite: None.

The interaction between language and social organization (social class, ethnic group, sex, occupation); language use in various situations (conversations, rituals, formal vs. informal occasions); problems of bilingualism, national vs. minority languages; effects of societal change on language. (F)

135 • California Indian Languages (4) Staff [D]

Prerequisite: Linguistics 20 or permission of instructor.

Survey of native languages of California: linguistic relationships within California and connections to non-California languages; language and culture areas; linguistic aspects of culture; grammatical characteristics of several languages. (S)

136 • Introduction to African Languages and Cultures (4) Hombert [D]

Prerequisite: None.

General introduction to the languages of sub-Saharan Africa concentrating on their cultural context. Topics to be discussed: language distribution; language classification; and their implications; early population movement. linguistic and archeological evidence; language and literature; African writing systems; language planning. (F)

137 • Structure of Bantu Languages (4) Hombert [D]

Prerequisite: Linguistics 136 or permission of instructor.

Investigation of relationships among the Bantu languages. Survey of phonological and grammatical structures of selected languages. The role of linguistic evidence for the reconstruction of Bantu history

138 • Linguistics and Prehistory (4) Hombert [D]

Prerequisite: None

Methods based on data from language distributions, linguistic reconstructions, genetic groupings and loan words are used by linguists to reconstruct population movements, homelands, and proto-cultures. The value of these methods will be discussed, with special reference to African and American Indian Languages.

139 • Introduction to Mayan Languages and Literatures (4) Staff [D]

Prerequisite: None

Introduction to the basic linguistic features and literary genre of Mayan languages. The evolutionary development of Mayan languages will be discussed. Native literary works from the sixteenth century will be examined for their linguistic, cultural, and literary content.

140 • Sign Language Systems of the World (4) Staff [D]

Prerequisite: None

This course will describe sign language systems of the world. Parallels as well as divergences between sign language and spoken language will be discussed. Special attention will be given to the social context of gesturing.

142 • History of Linguistic Theory (4) Staff [D]

Prerequisite: Linguistics 20

Emphasis will be on the development of 19th century European linguistics: the Neogrammarians, Saussure, the Prague School, Functionalism, and the development of 20th century American linguistics: anthropological linguistics, Bloomfieldians, generative-transformational schools and post-generative approaches.

160 • Structure of English (4) Staff [D]

Prerequisite: None.

Introduction to the phonological, morphological, syntactic, and semantic aspects of contemporary English (British and American, but primarily the latter). Some elementary linguistic ideas are introduced; and some of the recent discoveries in the structure of English are discussed, and related to the problems of teaching oral and written English.

165 • Language Acquisition (4) Schwartz, Li [D]

Prerequisite: Linguistics 20 or 110A.

The study of how children acquire language and the problem of accounting for "deviant" linguistic behavior.

175 • Introduction to Romance Linguistics (4) Staff [D]

Prerequisite: None.

The course aims to illustrate principles of comparative-historical linguistic analysis by examining Romance languages (French, Portuguese, etc.) for similarities and differences, and tracing their evolution from Vulgar Latin. Aspects of phonology, morphology, and syntax are approached non-technically.

185 • Animal Communication (4) Staff [D]

Prerequisite: None.

This course will survey a selected number of animal communication systems ranging from those of simple organisms to mammals, especially primates. Each system will be analyzed in terms of such features as its capacity for symbolization and problem-solving and will be examined vis-a-vis human language. (F)

186 • Language and the Brain (4) Staff [D]

Prerequisite: None

What is the ontogenetic development of human language and the brain? How and why does human language differ from primate communication systems? Topics to be covered include vari-

ous aspects of neurolinguistics such as lateralization, dichotic listening experiments, electroencephalography, and aphasia.

190A • Language Universals: Phonology (4) Hombert [D]

Prerequisite: Linguistics 111A

This course will deal with phonological universals. Universals will be looked at both from a synchronic (phonological systems) and diachronic (phonological processes) point of view. The naturalness of these universals will be considered both in articulatory and perceptual terms.

190B • Language Universals: Syntax and Semantics (4) Schwartz [D]

Prerequisite: Linguistics 110A.

The course concerns itself with syntactic and semantic generalizations across languages—from word order typology to color terms to the logical structure of requests. Part of the course deals with diachronic universals, with reference to notions of "drift" and markedness theory. The course complements Linguistics 190A which is devoted to phonological universals. Other courses in syntax and semantics now offered are either elementary (Introduction to Syntax), or language-specific (Structure of English), or areal (African Languages). The course serves majors as an advanced overview of syntax and semantics, and non-majors as a perspective on their own disciplines (e.g., Japanese, speech perception, language acquisition).

194 • Group Studies in Linguistics (2-3) Staff
Admission by special arrangement.

This course may be repeated with the consent of the department. A course limited to small groups whose interest and needs will determine the central focus. The meetings—normally two-three hours each and averaging at least once a week over the quarter—are not required to be periodic. A research paper is to be submitted by each student at the end of the quarter. Enrollment normally limited to 12 or fewer students.

•199 • Independent Studies in Linguistics (1-5) Staff

Admission by special arrangement.

Intended for the study of special areas within Linguistics. 199 courses are limited to no more than five units in one quarter and not more than 12 units total.

†Graduate courses

†Graduate courses offered only on student demand and/or faculty availability

203 • Studies in Classical Languages (4) Staff

Prerequisite: Admission by special arrangement.

The course examines aspects of the grammatical system of a classical language, (e.g., Latin, Greek, Tibetan, Chinese, Arabic, Hebrew, etc.)

205 • The Description of Language (3) Li
Prerequisite: Linguistics 110 (may be taken concomitantly with the instructor's permission).

Concerns of method: induction, intuition; grammatical relatedness; linguistic primes;

levels of analysis and their empirical motivation, the structure of grammar

209 • Syntactic Theory (4) Schwartz

Prerequisite: Linguistics 110A, 110B, or permission of instructor.

Consideration of special topics in the theory of syntax; alternative formalisms; current controversial aspects.

210 • Phonological Theory (4) Johnson

Prerequisite: Linguistics 111A or 111B or permission of instructor.

Aspects of lexical representation; theories of rule application; distinctive feature analysis and its problems.

211 • Formal Models of Language (3) Johnson, Li

Prerequisites: Linguistics 115 and 205 or 210.

The study of models of language structure and use. The focus is principally on the relation of automata to the notion 'grammar,' but some attention may be given to statistical models of production, perception, and change.

215 • Language Change (3) Li, Schwartz

Prerequisite: Linguistics 205.

Language acquisition in the child, rule ordering and re-ordering; conditions for generalization; types of innovation; constraints on restructuring; lexicon vs. rule; mechanisms of 'drift'

225 • Semantics (4) Li

Prerequisite: Recommended: Linguistics 205 and 210.

Its place in grammar: relation to syntax; the question of formalism and representation; relation to pragmatics and culture.

230 • History of Linguistics (4) Schwartz

Prerequisites: Linguistics 205 and 210.

The role of IE studies of the 19th century; the Prague school; American structuralism; current theories.

238 • Linguistics and Prehistory (4) Hombert
Prerequisite: None

Methods based on data from language distributions, linguistic reconstructions, genetic groupings and loanwords are used by linguists to reconstruct population movements, homelands and proto-cultures. The value of these methods will be discussed with special reference to African and American Indian languages.

240 • Anthropological Linguistics (4) Li

The course will (i) survey the modern history of theoretical linguistics: structuralism, generative and post-generative theories of language; (ii) present the fundamental concepts in methodologies of synchronic and diachronic linguistics; (iii) introduces field work methodologies.

260 • Structure of English (4) Schwartz

Prerequisite: None

The study of syntactic and semantic patterns in English. Analysis of such patterns will be presented in the framework of language universals. The problems of teaching oral and written English will be a major consideration of the course.

265 • Language Acquisition and Language Change (4) Schwartz

Prerequisite: At least one course in basic linguistics

The course deals with those aspects of linguistic change that relate to language acquisition—i.e., primarily internal mechanisms of change. Data from the language of children are examined. Questions of motivation and spread are addressed, particularly the issue of gradualism.

286 • Language and the Brain (4) Staff

Prerequisite: None

What is the ontogenetic development of human language and the brain? How and why does human language differ from primate communication systems? Topics to be covered include various aspects of neurolinguistics such as lateralization, dichotic listening experiments, electroencephalography, and aphasia.

297 • Graduate Studies (1-4) Staff

Admission by Special Arrangement.

Graduate credit given for an Upper Division course with additional work at the graduate level.

594AA—594ZZ • Special Topics (1-4) Staff

594PH • Special Topics in Phonology

594SX • Special Topics in Syntax

594SM • Special Topics in Semantics

Admission by special arrangement.

595AA—595ZZ • Group Studies (4) Staff

595PH • Group Studies in Phonology

595SX • Group Studies in Syntax

595SM • Group Studies in Semantics

Admission by special arrangement.

596AA—596ZZ • Directed Reading and Research (2-4) Staff

596PH • Directed Reading and Research in Phonology

596SX • Directed Reading and Research in Syntax

596SM • Directed Reading and Research in Semantics

Individual Tutorial.

Related courses in other departments

For details, see departmental listing

Electrical Engineering

166 • Principles of Programming Languages

167 • Translation of Programming Languages

English

111 • History of the English language

French

28 • Introduction to French Linguistics

*See N-2 for 198/199 independent studies unit limitations..

103A—B • Phonetics
 105B—C—D • French Linguistics
 204B • Old French Philology
 207A—B—D • Phonetics
 209A—B • Linguistics

German

120 • History of the German Language
 202A—B • Gothic
 225 • Seminar in the History of German Grammar

Philosophy

100C • Philosophy of Language
 150C • Advanced Topics in Philosophy of Language

Psychology

127 • Psychology of Language

Russian

108A—B • The Russian Language

Semitic

120A—B—C • Historical Semitic Linguistics

Sociology

136 • Analysis of Conversational Interaction

Spanish

100 • Introduction to Hispanic Linguistics
 101 • American Spanish
 107 • Languages in Contact
 114A—B—C • The Spanish Language: A Linguistic Approach
 121A—B • History of the Spanish and Portuguese Language

200 • Synchronic Linguistics
 202 • Diachronic Linguistics
 207 • Description and Measurement of Spanish-English Bilingualism
 209 • Dialectology
 212B • Bibliography and Methods of Research: Linguistics

Speech

117 • Language and human Behavior
 118 • The Limits of Language
 150 • Phonetics
 151 • Natural Acquisition of the Phonemic System
 152 • Measurement and Treatment of Language: Phonemic
 153 • Natural Acquisition of Syntactic-Semantic Pragmatic System
 154 • Measurement and Treatment of Language: Syntax-Semantics-Pragmatics

Literature, Film, and Culture

Courses Taught in English

The following courses in foreign literature, culture, and film are open to interested and qualified undergraduates and do not require the knowledge of a foreign language. All lectures, discussions, and assignments are in English. The letter in brackets following each course designates the General Education requirement to which the class applies. (See **M4** for details). See appropriate departmental listings for course descriptions. Students who hope to apply one or more of these courses toward their major are urged to verify with their major department which and how many of these courses will be acceptable.

Classics

20A—B • Greek and Latin in Current English [D]
 36 • Ancient Epic and Narrative [D]
 37 • Greek Literature in Translation [D]
 38 • Latin Literature in Translation [D]
 40 • Greek Mythology [D]
 100A—B • Greek and Roman Civilization [D]
 101 • The Nature of Man in Greek Thought [D]
 102 • Greek Tragedy [D]
 103 • Survey of Greek and Roman Religion [D]
 104 • Women in Ancient Rome [D]
 105 • Ancient Athletics [D]
 106 • Religion, Magic, and Medicine in Ancient Greece [D]
 120 • Greek and Latin Lyric Poetry [D]

125 • Greek and Roman Historiography [D]
 130 • Comedy and Satire [D]
 135 • Seneca and Roman Tragedy [D]
 180A—B • Mediterranean Archaeology [C]
 180D • Roman Archaeology [C]
 198 • Special Readings

Comparative Literature

30A—B—C • Masterpieces of World Literature [D]

Eastern Languages

Arabic 110 • Arabic Literature in Translation [D]
 Chinese 110A—B • Survey of Classical Chinese Literature [D]
 Chinese 112 • Survey of Modern Chinese Literature [D]
 Hebrew 110 • Hebrew Literature in Translation [D]
 Japanese 110A—B • Survey of Pre-Modern Japanese Literature [D]
 Japanese 112 • Survey of Modern Japanese Literature [D]
 Japanese 140 • Topics in Japanese Culture

English

38 • World Literature - Ancient [D]

- 39 • World Literature - Medieval through Eighteenth Century** [D]
- 144 • The European Renaissance** [D]
- 172 • Special Studies in the Enlightenment** [D]
- 177 • The Age of Romanticism** [D]
- 184 • Modern European Literature** [D]

French and Italian

French

- 25X • Seminar on French Literature** (subject varies) [D]
- 102X • Social Attitudes and Language** [D]
- 106X—Y—Z • History and Culture of Italy in Translation** [D]
- 109X—Y—Z • Survey of French Literature in Translation** [D]
- 137X • Love in the Medieval French Narrative** (*Tristan and Isolde. The Romance of the Rose*, Marie de France, Chretien de Troyes, and other works and authors) [D]
- 138X • Medieval French Drama** [D]
- 141X • Rabelais** [D]
- 151X • Emotion and intellect in 17th Century French Culture** [D]
- 161X • Utopian Tradition** (Diderot, Rousseau, Voltaire, Saint-Simon, Fourier, Sartre, Marcuse, and others) [D]
- 162X • Wit and Satire** (*Candide and Rasselas*) [D]
- 163X • Diderot** [D]
- 164X • Rousseau and the Confessional Urge** [D]
- 165X • The Myth of Don Juan in Literature and Music** [D]
- 170X—Y—Z • 19th Century French Literature** (Hugo, Baudelaire, Mallarme, Verlaine, Rimbaud, Chateaubriand, Balzac, Stendhal, Flaubert, Zola, and others) [D]
- 172X • Literature and the Rise of the Modern World** (Hugo, Balzac, Flaubert, Baudelaire, Zola, and other modern French authors) [D]
- 174X • Aspects of the French Novel** (Balzac, Stendahl, Flaubert, Zola, Proust, Gide, Camus) [D]
- 176X • The Symbolist Heritage** (Rimbaud, Verlaine, Mallarme, and other French symbolist poets) [D]
- 177X • Literature and Religion in Modern France** (selected authors such as Hugo, Balzac, Flaubert, Baudelaire, Huysmans, Claudel, Gide, and Mauriac) [D]
- 178X—Y—Z • French Film: Theory and Practice** (Surrealism, New Wave, Cinema verité, Political film-making of the 1960's, etc.) [C]
- 179X • Decadence** (selected authors such as Proust, Gide, Celine, and Genet) [D]
- 180X—Y • Representative Works of French Literature** (selected authors such as Camus, Sartre, Beckett, Genet, Proust) [D]
- 182X—Y • 20th Century French Novel** (Valery, Gide, Mauriac, Breton, Sartre, Robbe-Grillet, Beckett, and others) [D]
- 183X • Introduction to Structuralism** [D]
- 184X—Y—Z • French Film** (Rene Clair, Robert Bresson, Jean Vigo, Alain Resnais, Claude Chabrol, Max

Ophuls, Francois Truffaut, Jean Cocteau, Jean Renoir, Eric Rohmer, and others) [C]

- 185X • Contemporary French Theatre** (selected authors such as Sartre, Camus, Artaud, Beckett, Ionesco, Genet) [D]
- 186X • Beckett and Godard: The Difficulties of Creation**
- 187X—Y • French Cinema of the 1930s and since World War II** [C]
- 188X • Contemporary French Drama and Film** (Beckett, Ionesco, Genet, and such film makers as Godard) [C]
- 189Y—Z • Personal Documentary** (From Vertov to Cinema Verité) [C]

Italian

- 114X—Y—Z • Masterpieces of the Middle Ages** (Dante, Petrarch, Boccaccio) [D]
- 116X • Machiavelli** [D]
- 116Y • Love and Chivalry in the Italian Renaissance** (authors such as Ariosto and Castiglione) [D]
- 116Z • Love and Society in the Italian Renaissance** (Michelangelo, Tasso)
- 118X • Modern Italian Novel in Translation** [D]
- 139X—Y—Z • Survey of Italian Literature** (from the middle ages to the present) [D]
- 150X • Italian Novel into Film** [C]
- 151X • Seminar on the Literature of the Italian South** [D]
- 180X—Y—Z • World Cinema** [C]
- 181X • Post-War Italian Cinema: Major Currents** [C]
- 188X—Y • Introduction to Italian Cinema** [C]

Germanic and Slavic Languages and Literatures

German

- 160D • Expressionism in the Film in Art and the Theatre**
- 161 • Classicism and Romanticism in German Literature** [D]
- 162 • Kafka, Mann and their Age** [D]
- 163 • Nazism and its Aftermath** [D]
- 164A—I • Great German Writers** [D]
- 167AB • Humanism and Antihumanism** [D]
- 168 • The Faust Tradition** [D]
- 172 • Hermann Hesse** [D]
- 172S • Proseminar on Hesse** [D]
- 173 • Epic Theater and Recent Trends in Drama** [D]
- 174 • Literature and Psychology in the 19th and 20th Century** [D]
- 175 • Genius and Madness in Literature** [D]
- 187 • Strauss and Hofmannsthal**

Russian

- 115A—B • Survey of Russian Literature [D]
 120 • Russian Drama [D]
 125 • Twentieth Century Russian Literature [D]
 127 • The Silver Age [D]
 130 • Dostoevski [D]
 131 • Tolstoy [D]
 133 • Chekov [D]
 134 • Nabokov [D]
 150 • Russian Folk Literature [D]
 161 • Writings of Russian Dissidents [D]

Scandinavian

- 139A—B—C • Scandinavian Literature in Translation [D]
 140 • Swedish Film [C]

Spanish and Portuguese**Portuguese**

- 50FS • Freshman Seminar
 114 • Literature of the Portuguese Expansion [D]
 115 • Brazilian Literature in English Translation [D]

- 120 • Portuguese Literature in English Translation [D]
 125A—B • Culture and Civilization of Portugal and Brazil [D]
 128 • Luso-Brazilian Cinema [C]
 180 • African Literature in Portuguese in English Translation [D]

Spanish

- 50FS • Freshman Seminar
 115A—B • Masterpieces of Spanish Literature in English Translation [D]
 116 • Juan Ruiz: The Book of Good Love [D]
 120A—B • Spanish American Literature in English Translation [D]
 126 • Spanish Cinema [C]
 127 • Latin American Cinema [C]
 142 • Don Quixote in English Translation [D]
 180 • Mexican Civilization [D]
 181 • Hispanic Poetry: 1900-1945 in English Translation [D]
 182 • Hispanic Poetry since 1945 in English Translation [D]

Mathematics

Professors

- Charles A. Akemann, Ph.D., *UC Berkeley; functional analysis.*
 Seymour Bachmuth, Ph.D., *New York University; group theory.*
² ³Thomas K. Boehme, Ph.D., *California Institute of Technology; functional analysis, operational calculus.*
 Ronald Book, Ph.D., *Harvard University; theoretical computer science, applied discrete mathematics.*
 Andrew M. Bruckner, Ph.D., *UC Los Angeles; real analysis.*
³Michael J. Cambern, Ph.D., *UC Berkeley; functional analysis.*
¹Jack G. Ceder, Ph.D., *University of Washington; real analysis and general topology.*
 John A. Ernest, Ph.D., *University of Illinois; functional analysis, topological groups, Von Neumann algebras, operator theory. (Chairperson)*
 Ky Fan, D.Sc., *University of Paris; topology and functional analysis.*
 Larry J. Gerstein, Ph.D., *University of Notre Dame; quadratic forms, number theory.*
 Eugene C. Johnsen, Ph.D., *Ohio State University; combinatorial mathematics and matrix theory.*
 Paul J. Kelly, Ph.D., *University of Wisconsin; geometry (convexity theory).*
 Roy Leipnik, Ph.D., *UC Berkeley; applied mathematics.*

- Marvin Marcus, Ph.D., *UC Berkeley; linear and multilinear algebra.*
¹Webb C. Miller, Ph.D., *University of Washington; computer science, numerical analysis.*
 Kenneth C. Millett, Ph.D., *University of Wisconsin; algebraic and geometric topology*
 Henryk Minc, Ph.D., *University of Edinburgh; linear algebra, matrix theory and combinatorial analysis.*
 Horace Y. Mochizuki, Ph.D., *University of Washington; group theory.*
 Morris Newman, Ph.D., *University of Pennsylvania; linear algebra and number theory.*
 James B. Robertson, Ph.D., *Indiana University; probability and ergodic theory.*
³Stephen Simons, Ph.D., *Trinity College, Cambridge; functional analysis.*
 James M. Sloss, Ph.D., *UC Berkeley; partial differential equations.*
 Milton Sobel, Ph.D., *Columbia University; statistics.*
 David A. Sprecher, Ph.D., *University of Maryland; real analysis, superpositions of functions.*
 Robert C. Thompson, Ph.D., *California Institute of Technology; linear algebras, number theory.*
 Max. L. Weiss, Ph.D., *University of Washington; complex analysis, function algebras.*
 Raymond Y. Wong, Ph.D., *Louisiana State University; topology.*

Adil Yaqub, Ph.D., *UC Berkeley*; *ring theory and universal algebras*.
 Julius Zelmanowitz, Ph.D., *University of Wisconsin*; *rings and modules*.

Associate Professors

John E. Doner, Ph.D., *UC Berkeley*; *logic, computer science*.
¹J. Douglas Moore, Ph.D., *UC Berkeley*; *differential geometry*.
 Phillip A. Ostrand, Ph.D., *Northwestern University*; *general topology and combinatorial mathematics*.
 J. S. Rao, Ph.D., *Indian Statistical Institute*; *statistics (Vice Chairperson)*.
¹, ²Melvin Rosenfeld, Ph.D., *UC Los Angeles*; *functional analysis*.
 Martin Scharlemann, Ph.D., *UC Berkeley*; *topology*.
¹Julian Weissglass, Ph.D., *University of Wisconsin*; *semi-groups*.

Assistant Professors

Leon Pesotchinsky, Ph.D., *Leningrad University*; *statistics*.

Visiting Professors

Robert Gordon, Ph.D., *algebra*.
 Edward Formanek, Ph.D., *Rice University*; *algebra*.
 Alexander Lichtman, Ph.D., *Moscow State University*; *algebra*.
 Bernard McDonald, Ph.D., *Michigan State University*; *algebra*.
 Paul Melvin, Ph.D., *UC Berkeley*; *topology*.

Visiting Lecturer

Craig Squire, Ph.D., *UC Berkeley*; *group theory*.

Professors Emeriti

Lewis F. Walton, Ph.D., *UC Berkeley*.
 Raymond L. Wilder, Ph.D., *University of Texas*.

¹Absent on leave, Fall 1980
²Absent on leave, Winter 1981
³Absent on leave, Spring 1981

Concerns of the department

The Department of Mathematics offers broad training in pure and applied mathematics. On the undergraduate level, students can choose between programs which will prepare them for graduate school and career-oriented programs. Undergraduate majors are available in the following areas:

Mathematics (B.A. and B.S.).

Mathematical Sciences (B.A. and B.S.).

Economics-Mathematics (B.A.; offered jointly with the Economics Department).

The M.A. and Ph.D. degrees can be earned with training in a broad range of topics in pure and applied mathematics as described in the following sections on Graduate Programs.

Advising and Publications

All students are welcome to consult with the Mathematics Department advisers as to the proper choice of mathematics courses to take and to obtain information and advice concerning careers and advanced training. Inquire at the Mathematics Department office—6607 South Hall; phone: 961-2172.

To keep students informed of new courses to be offered, recent changes in requirements, part-time jobs in the Department etc., the Department publishes *Math Notes* at the beginning of each quarter. The Department also publishes a Weekly Calendar to keep students and faculty informed of current seminars, colloquia, and special events. These, as well as free brochures describing mathematics and mathematically related programs and career information, are available from the departmental office listed above. (These include the following: *Employment Opportunities*, *Mathematics at UCSB - undergraduate*, *Graduate Mathematics at UCSB*).

Placement and Diagnostic Examinations

Placement examinations in calculus are given during registration week of each quarter for students with prior course work in calculus.

Every student intending to enroll in Mathematics 3A, 3S, 7A 34A, or 34S is required to take the Algebra Diagnostic Test. Times and places are announced in the *Schedule of Classes*.

On the basis of examination results, students will be advised as to which of the following courses is most appropriate: Mathematics 1, 1SX, 1SY, 3A, 7A, 34A.

Experience shows that review of the material prior to taking the test significantly improves results. Review materials on algebra may be obtained from the UCSB Bookstore, University of California, Santa Barbara 93106 for \$1.90. Mail orders will be accepted; add \$.50 for postage and handling, and make out the check for \$2.40 to "UCSB Bookstore."

Self-paced courses

Self-paced versions of several math courses are available. They are indicated by an 'S' following the course number designation.

Bachelor's degrees

For the Mathematics and Mathematical Sciences majors, students should have completed two years of algebra and courses in plane geometry and trigonometry in high school. Students lacking this background should take Mathematics 1 (or 1SX or 1SY) and/or 2 (or 2S). Students should complete the courses in preparation for their major, as stated below, in their first two years.

Bachelor of Arts—Mathematics

Preparation for the major

Required:

Mathematics 7A—B—C or 3A—B—C or appropriate portions of 3S

*Mathematics 3D or 5B—C or appropriate portions of 3S
Mathematics 6A

Mathematics 8 or 8S

*Students who complete Mathematics 160A—B as part of the upper division major will be excused from the Mathematics 3D or 5B—C requirement.

Upper Division major

Required: 40 upper division Mathematics units (excluding Math 100AB, 192 and PSTAT 133ABC). These 40 units must include:

1) 8 units chosen from: Mathematics 102B, 103, 104C, 106, 108A—B—C, 111A—B—C, 115A—B—C, 131, 136A—B, 138, 139, 141; and

2) 8 units chosen from: Mathematics 101B, 104B, 118A—B—C, 119A—B—C, 122A—B, 124A—B—C, 140A, 160A—B; and

3) 8 units chosen from: Mathematics 102A, 104A, 109A—B, 110, 112A—B, 113, 114A—B, 116, 132A—B—C, 137A—B, 140B—C, 150, 151, 154, 172; Probability and Statistics 105, 107, 117, 120A—B—C, 121A—B—C.

Bachelor of Science—Mathematics

Preparation for the major

Required:

Mathematics 7A—B—C or 3A—B—C or appropriate portions of 3S

Mathematics 3D or 5B—C or appropriate portions of 3S
Mathematics 6AB

Mathematics 8 or 8S

*Students who complete Mathematics 160A—B as part of the upper division major will be excused from the Mathematics 3D or 5B—C requirement.

Upper Division major:

Required: 52 upper division Mathematics units (excluding Math 100AB, 192 and PSTAT 133ABC). These 52 units must include:

1) Mathematics 108A—B; and
2) One complete sequence from: Mathematics 111A—B—C, 118A—B—C, 140A—B—C; and

3) One complete sequence from: Mathematics 104A—B—C, 124A—B—C, Probability/Statistics 120A—B—C.

Bachelor of Arts—Mathematical Sciences

Preparation for the major

Required:

Mathematics 7A—B—C or 3A—B—C or appropriate portions of 3S

Mathematics 5A—B—C

Mathematics 6A

Mathematics 8 or 8S

*Mathematics 9 or 9S

*Students who complete Mathematics 108A—B as part of the upper division major will be excused from the Mathematics 9 requirement.

Upper Division major

Required: 40 upper division Mathematics units (excluding Math 100AB, 192 and PSTAT 133ABC). These 40 units must include:

1) Mathematics 111A—B—C or 136A—B; and

2) 20 units chosen from the sequences: Mathematics 104A—B—C, 124A—B—C; Probability/Statistics 120A—B—C, including one full sequence.

Bachelor of Science—Mathematical Sciences

Preparation for the major

Required:

Mathematics 7A—B—C or 3A—B—C or appropriate portions of 3S

Mathematics 5A—B—C

Mathematics 6AB

Mathematics 8 or 8S

*Mathematics 9 or 9S

*Students who complete Mathematics 108A—B as part of the upper division major will be excused from the Mathematics 9 requirement.

Upper Division major

Required: 52 upper division Mathematics units (excluding Math 100AB, 192 and PSTAT 133ABC). These 52 units must include:

1) Mathematics 111A—B—C or 136A—B; and

2) 32 units chosen from: Mathematics 104A—B—C, 124A—B—C; Probability/Statistics 120A—B—C.

Bachelor of Arts—Economics/Mathematics

Preparation for the major

For this major, the student should have had preparation in high school mathematics close to that mentioned above. In the first two years the student should take Economics 1 and 2; Mathematics 3A—B—C or 7A—B—C, or appropriate portions of 3S; 3D, or appropriate portions of 3S; 5A

or 119A, and 8 or 8S. Upper division students transferring from another major or institution may substitute Economics 109 for Economics 1 and 2.

Upper Division major

A minimum of 40 units in upper division Economics and Mathematics is required, (not including Economics 109 or Mathematics 100A—B, 192 or Probability/Statistics 133ABC) with at least 16 units in each department. These must include Economics 104A—B and 105, Mathematics 108A—B and either Economics 141A—B—C or Probability/Statistics 120A—B—C. For breadth, further elective courses are recommended in applied fields of economics and in mathematics courses concerned with optimization. Students should consult closely with their adviser in the Economics or Mathematics Departments concerning their upper division program, particularly if the student intends to pursue graduate study in a closely related area such as mathematical economics, applied mathematics, statistics or operations research.

Program Planning

Graduate Preparatory Students preparing for graduate study in mathematics are advised to take Mathematics 108A—B in their sophomore year, 111A—B—C and 122A—B in their junior year, and 118A—B—C in their senior year. Students should consult with their faculty adviser in planning their upper division programs.

Teaching Program Mathematics 108A—B is basic, general background, while 101A—B, 102A—B, and 103 form the core of the teacher training program. Appropriate electives include Mathematics 106, 110, 113, 114A—B, 115A—B—C, 137A—B, and Probability/Statistics 105, 107 and 117. Especially capable students are encouraged to substitute courses from the Mathematics 111 and either Mathematics 118 or 160 sequences in place of 101A—B and 103.

Graduate Program: basic courses

The department offers degrees with specializations in a number of different areas. Certain one-year course sequences have been designated as "basic" and will normally be offered every year. The basic graduate course-sequences in Mathematics are:

Real and Complex Analysis	Math 200A—B—C
Modern Algebra	Math 220A—B—C
General Topology	Math 226A—B—C

The basic graduate course sequences in Computer Science are:

Foundations of Computer Science,
Math 251A—B—C (not offered 80/81)

Algorithms and Complexity,
Math 254A—B—C (not offered 80/81)

Numerical Computation, Math 204A,
247, 248

The basic graduate course-sequences in Probability and

Statistics are:

Statistical Theory	P/S 207A—B—C
Probability Theory	P/S 213A—B—C

Master of Arts in Mathematics

Admission

Candidates for admission must present a bachelor's degree with a major in mathematics or the equivalent of such training. Entering students may be appraised by means of examination in addition to the evaluation of their records. Whenever necessary, supplementary course work will be required. The department offers two plans for completing the degree: Plan I, thesis option, and Plan II, comprehensive examination option.

Requirements for the degree

Plan I—Thesis Option

1. Completion of 42 units with at least a grade of "B", 24 of which must be graduate courses offered by the Mathematics Department (excluding Mathematics 270, 271 and 290.) The 24 graduate units must include at least one of the basic graduate course-sequences in mathematics, probability and statistics, or computer science. They can also include up to 8 units of directed reading and thesis preparation (Mathematics 596/598). The remaining courses may be selected from upper division or graduate courses in mathematics or in appropriate related fields with approval of the Graduate Committee.

2. Demonstration of adequate knowledge in linear algebra, modern algebra, real analysis and complex analysis. This requirement may be satisfied by passing Mathematics 108A—B—C, 111A—B—C, 118A—B—C, and 122A—B with an average grade of at least B in each sequence. Essentially equivalent courses at another college or university will be evaluated by the Graduate Committee.

3. Preparation of an acceptable thesis under the supervision of a faculty member and oral defense of the thesis before a faculty committee. The student and thesis supervisor must present to the Graduate Committee for its approval a coherent course-work and thesis program about one year before expected graduation.

Plan II—Comprehensive Examination Option

1. The course work requirements are the same as those described in paragraph 1 under the Plan I-Thesis Option above, *except* that here the 24 graduate units must include two of the basic graduate course-sequences in mathematics, probability and statistics, or computer science.

2. Passing of comprehensive examinations in algebra and in analysis, based on Mathematics 108A—B—C; 111A—B—C; 118A—B—C; 122A—B. Alternately, students may pass two of the three qualifying examinations in algebra, analysis, and topology for the Ph.D. degree.

Master of Arts in Applied Mathematics

Admission

A candidate must 1) fulfill the scholarship requirements for graduate study; 2) hold a bachelor’s degree in mathematics or a closely related field; 3) have had undergraduate course work in matrix algebra, differential equations, advanced calculus, and in some area in which mathematics is applied. Evaluation of the candidate’s past work will be made by the graduate committee and supplemental undergraduate courses will be required when necessary.

Requirements for the degree

The department offers two plans for completing the degree: Plan I, thesis option, and Plan II, comprehensive examination option. These are described below. The candidate must complete 42 units, with at least a grade of “B”, 24 of which must be graduate courses offered by the Mathematics Department (excluding Math 270, 271 and 290). These units must include at least one emphasis option from the following list and, for a student in Plan II must include one of the basic graduate course-sequences in mathematics, probability and statistics, or computer science. (The core graduate course of the emphasis option cannot be counted in this capacity.)

Emphasis Options—Core Graduate Courses

- 1) Numerical Analysis: Math 204A-247-248
2) Optimization: Math 206A—B—C
3) Discrete Mathematics: Math 218A—B—C
4) Physical Mathematics: Math 245A—B—C or 246A—B—C
5) Mathematical Models: Math 244A—B—C
6) Other: one-year graduate course with approval of the Graduate Committee

The remaining 18 units may be in upper division or graduate level courses in mathematics or (with the approval of the Graduate Committee) outside of Mathematics, with a limit of 9 units outside of the Mathematics Department.

Plan I—Thesis Option

A demonstrated mastery of applied algebra and applied analysis. This requirement may be fulfilled by passing each of the four sequences Math 108A—B, 136A—B (applied algebra); 104A—B—C, 124A—B—C (applied analysis), with an average grade of at least B in each sequence. Equivalent coursework taken outside UCSB will be evaluated by the Graduate Committee. At most 8 of the 24 graduate units may be in Math 596/598 combined. This implies that the remaining 16 units will be in the 200 series.

Preparation of an acceptable thesis under the supervision of a faculty member and its defense before a faculty committee.

Plan II—Examination Option

Passing comprehensive examinations in applied algebra (based on material in Math 108A—B and Math 136A—B) and applied analysis (based on material in Math 104A—B—C and Math 124A—B—C).

Doctor of Philosophy—Mathematics

The department offers the Ph.D. degree in Mathematics. There is also a track in Probability and Statistics that is described below.

Admission

A candidate for admission to this program must fulfill the scholarship requirements for graduate study (see Graduate Division Announcement) and should have a strong undergraduate background in mathematical sciences.

Requirements for the degree

A student advances to candidacy for the degree by
(a) passing 72 units of graduate courses offered by the Mathematics Department, with numbers less than 270, with a grade of at least “B” or “S” in each course. These 72 units must include at least 3 basic sequences and at least one further complete 3-quarter graduate sequence which can be a basic sequence or any other one-year graduate sequence with a number of less than 260. S/U grading is not allowed in the 4 sequences referred to above.
(b) passing two preliminary examinations. Each exam covers the material in one of the 8 basic graduate course-sequences.
(c) exhibiting proficiency in two foreign languages, normally chosen from French, German, and Russian;
(d) passing an oral examination on the proposed research plan for the doctoral dissertation.

After advancing to candidacy, a student completes the requirements for the degree by submitting an acceptable thesis representing an original mathematical contribution, and defending this thesis before a faculty committee.
Experience as a Teaching Assistant is a requirement for the Ph.D.
Further information is available from the Mathematics Department.

Graduate Programs in Probability and Statistics

There are two programs available: A Master of Arts degree in Statistics and a Probability and Statistics track in the program for the Ph.D. degree in Mathematics. The basic graduate course-sequences in Probability and Statistics are:

Statistical Theory	P/S 207A—B—C
Probability Theory	P/S 213A—B—C

Master of Arts—Statistics

Admission

A candidate for admission must fulfill the academic requirements for graduate study and have had undergraduate course work in linear algebra (Math 108A—B or equivalent), and analysis (Math 118A—B—C or equivalent).

Students who do not have credit for P/S 120A—B—C or an equivalent course, will be obliged to take P/S 120A—B—C since it is a prerequisite for the required graduate courses in the program. It is also desirable for students to have had some undergraduate work in an area in which mathematics and/or statistics is applied. When necessary, supplemental undergraduate courses may be required which will not count toward the 42 unit course requirement given below. Students must also have some basic knowledge and capability in programming in FORTRAN or some other appropriate computer language.

Requirements for the degree

The candidate must complete 42 units of approved upper division or graduate work, including P/S 120A—B—C and the two basic graduate course-sequences in probability and statistics, if these or equivalent courses have not been taken prior to entering the program. The Department offers two plans for completing the degree:

Plan I - Thesis Option

Preparation of an acceptable thesis under the supervision of a faculty member and its defense before a faculty committee. At most six of the 42 may be in P/S 596/598.

Plan II - Examination Option

Passing a comprehensive (written) examination based on the material in P/S 120A—B—C, and the two basic graduate course-sequences. Borderline cases with respect to this examination will be asked to take a subsequent oral examination on all of their course work, and in particular on the part in which they showed a deficiency.

Ph.D. in Mathematics (Probability and Statistics track)

Admission.

A candidate for admission to this program must fulfill the scholarship requirements for graduate study and should have a strong undergraduate background in mathematics.

Requirements for the degree

A student is advanced to candidacy for this degree by

(a) passing the two basic course-sequences and the comprehensive examinations based on them. In addition, the student must pass one whole basic graduate course sequence in another area. (This would normally be Math 200A—B—C, but other alternatives can be worked out with the Graduate Committee.)

(b) exhibiting proficiency in two foreign languages, normally chosen from French, German and Russian. A working knowledge of a programming language can be substituted for one of the foreign languages.

(c) passing an advanced examination based on at least two one-year graduate courses in the student's area of interest, other than the two basic courses.

(d) passing an oral examination on the proposed research plan for the doctoral dissertation.

After advancing to candidacy, a student completes the requirements for the degree by submitting an acceptable thesis representing an original contribution, and defending this thesis before a faculty committee.

Further information is available from the Graduate Adviser for Probability and Statistics, Department of Mathematics.

Course listings

Undergraduate course classification

The following is a grouping of the undergraduate courses according to the areas in which they fall and the functions they serve. Some courses are listed in more than one group.

General Interest

Mathematics 8, 8S, 10, 12A—B, 13, 14, 30A, 30B, 106, 109A—B, 110, 170, 172

Probability/Statistics 33, 107

Preparation for Calculus

Mathematics 1, 1SX, 1SY, 2, 2S, 14.

Calculus

Mathematics 3A—B—C—D, 3S, 5A—B—C, 7A—B—C, 34A—B, 34S, 160A—B.

Algebra

Mathematics 8, 8S, 9, 9S, 103, 104C, 106, 108A—B—C, 111A—B—C, 115A—B—C, 131, 132A, 136A—B—C, 138, 139, 141, 172.

Analysis

Mathematics 101B, 104A—B, 118A—B—C, 119A—B—C, 122A—B, 125A—B—C, 131, 140A—B—C, 160A—B

Applied Mathematics

Mathematics 5A—B—C, 6A—B, 30A—B, 31A—B, 92, 104A—B—C, 108A—B—C, 116, 119A—B—C, 122A—B, 124A—B—C, 125A—B—C, 131, 132A—B—C, 136A—B, 137A—B, 138, 139, 160A—B, 150, 151, 154, 172, 192; Probability/Statistics 120A—B—C, 121A—B—C.

Combinatorics and Finite Mathematics

Mathematics 30A, 30B, 31A—B, 116, 137A—B, 138, 139.

Computer Science

Mathematics 6A—B, 31A—B, 92, 104A—B—C, 150, 151, 154, 192; P/S 121A—B—C.

Geometry and Topology

Mathematics 102A—B, 112A—B, 113, 114A—B, 140A—B—C.

Logic and Foundations

Mathematics 109A—B, 110.

Mathematics for Biological and Social Sciences and Economics

Mathematics 10, 12AB, 30A, 30B, 34A—B—C, 131, 132A—B—C, 172; Probability/Statistics 33, 105.

Mathematics for Physical Sciences

Mathematics 5A—B—C, 119A—B—C, 124A—B—C, 125A—B—C.

Probability and Statistics

Mathematics 34C; Probability/Statistics 33, 105, 107, 117, 120A—B—C, 121A—B—C, 122, 123, 124, 132B, 133A—B—C, 134.

Teacher Preparation

Mathematics 31A—B, 100A—B, 101A—B, 102A—B, 103, 106, 108A—B, 109A—B, 110, 112A—B, 113, 114A—B, 115A—B—C, 117, 137A—B, 170; Probability/Statistics 105, 107.

Teaching credentials

A bachelor's degree in Mathematics is an acceptable major for entry into a Single Subject (secondary) or Multiple

Subject (elementary) Credential Program. Students completing this degree, who plan to teach at the secondary level in California, should apply to the Single Subject Credential Program in the area of Mathematics. The State of California requires that credential candidates demonstrate their subject matter competency in this teaching area. Subject matter competency can be established in one of two ways: either by passing the National Teachers Examination in this teaching area **or** by completing a State approved program. (Consult the Department of Mathematics concerning the approved Waiver program in Mathematics.) Students should consult with department advisors, or advisors in the Graduate School of Education about courses which, when completed, eliminate the need for taking the National Teachers Examination. Students who wish to pursue a Multiple Subject (elementary) Teaching Credential are advised that the State of California requires that students complete either a Liberal Studies program (see section J of the catalogue), or pass the National Teachers Examination (Common Examination). It is quite feasible for students to complete a degree major and to simultaneously fulfill the requirements for the Liberal Studies program. Admission to credential programs at UCSB also requires certain prerequisites. The following chart identifies these requirements.

	English 106	Ergonomics 109	Mathematics 100 A & B	Pre-Professional Experience
Multiple Subject	X	X	X	X
Single Subject	X	X		

Mathematics
Lower Division courses

1 • College Algebra (4) Staff
An introductory course intended to provide a general background in algebra. Also serves as preparation for more advanced courses, e.g. Mathematics 3A, 7A, 34A, 3S, 34S, for students requiring such preparations.
Numbers and sets, algebraic manipulation, inequalities, functions and graphing, polynomials and the quadratic formula, systems of linear equations. (Not open to students who have received credit for Math 1SX or 1SY or to students who received a grade of C or better in mathematics courses whose prerequisites include algebra.)

1SX • Self-Paced College Algebra (1-6) Staff P/NP only
This course consists of 24 sequential instructional modules which cover the subject matter of Math 1 and additional advanced topics in College Algebra. The student progresses at his/her own pace. A diagnostic test is used to place each student at the proper starting point in the sequence of modules. The student receives 1/2 unit credit for each two modules passed (minimum 4 modules for 1 unit credit). The student who does not pass at least 4 modules receives 1 unit NP grade. The course may be taken over more than one quarter, but credit will not be given

more than once for any module. The final examination is tailored to the modules mastered by each student. (Open only with the permission of the instructor to students who have taken Math 1 or 1SY and then only to cover modules not covered by their other course. Not open to students who have received a C or better in mathematics courses whose prerequisites include algebra.)

1SY • Self-Paced College Algebra (4) Staff. Letter grade only.
This course is organized in the same way as Mathematics 1SX, it operates the same, covers the same material, but carries 4 units of credit with the grade depending upon the number of modules passed as verified by the final examination. (Not open to students who have received any credit for Mathematics 1SX, had Mathematics 1 or have received a C or better for mathematics courses whose prerequisites include algebra.)

2 • The Elementary Functions: Logarithms, Exponentials and Trigonometry (4) Staff
An introductory course intended to provide a general background in the exponential, logarithmic and trigonometric functions.
Exponential and logarithmic functions, analytic geometry of lines and circles, geometric description of trigonometric functions, inverse trigonometric form of complex numbers, circular func-

Career information

The Mathematics Department publishes an information booklet on careers and professional opportunities for majors in mathematics, mathematical sciences, and economics/mathematics. This booklet is available in the Department office, South Hall 6607. In addition, the Department has on file more detailed written information on careers and career outlooks which may be consulted. Students wishing to discuss careers and advanced training with a faculty adviser should inquire in the Department office listed above.

Prizes and Awards

Various prizes and awards are offered each year to outstanding majors in Mathematics. These include the Raymond L. Wilder Award and student memberships in the Mathematical Association of America. Each award is given on the basis of academic excellence in the Mathematics program.

Correspondence information

Department of Mathematics, University of California, Santa Barbara, California 93106. Phone: (805) 961-2171.

Mathematics, Probability and Statistics

The department offers most, but not all, of the courses listed each year and many each quarter. Questions concerning specific courses should be directed to the Mathematics Department office.

tions and their graphs, elementary trigonometric identities, use of trigonometric tables, solution of triangles. (Not open to students who have received a grade of C or better in mathematics courses whose prerequisites include trigonometry or to students who have received credit for Mathematics 2S).

2S • Self-paced Elementary Functions: Logarithms, Exponentials, Trigonometry (1-4) Staff
This is a self-paced version of Mathematics 2. (Not open to students who have received a grade of C or better in mathematics courses whose prerequisites include trigonometry or to students who have received credit for Mathematics 2.)

***3A • Calculus with Applications, First Course** (4) Staff [B1]
Prerequisites: 1 1/2 years of high school algebra (or Mathematics 1, 1SX or 1SY) and trigonometry (or Mathematics 2 or 2S, which may be taken concurrently).
*Students are required to take the Algebra Diagnostic Exam prior to enrollment.
Differential calculus including analytic geometry, functions and limits, derivatives, techniques and applications of differentiation, logarithmic and trigonometric functions. (Not open to students who have received credit for 7A or 34A or appropriate portions of 3S or 34S.)

3B • Calculus with Applications, Second Course (4) Staff [B1]

Prerequisites: Mathematics 3A or 7A or 34A or appropriate portions of 3S or 34S.

Integral calculus including definite and indefinite integrals, techniques of integration, applications in mathematics and physics. (Not open to students who have received credit for Mathematics 7B or 34B or appropriate portions of 3S or 34S.)

3C • Calculus with Applications, Third Course (4) Staff [B1]

Prerequisites: Mathematics 3B or 7B or 34B or appropriate portions of 3S or 34S.

Calculus of several variables including partial derivatives, multiple integrals, infinite series, applications in mathematics and physics. (Not open to students who have received credit for 7C or appropriate portions of 3S.)

3D • Calculus with Applications, Fourth Course (4) Staff [B1]

Prerequisites: Mathematics 3C or 7C or appropriate portions of 3S.

Vector calculus including vector valued functions, differentiation, line and surface integrals, Green's theorem, Stokes' theorem, divergence theorem. (Not open to students who have received credit for the appropriate portions of 3S.)

***3S • Self-Paced Calculus with Applications** (1-16) Staff [B1 if 3 or more units are earned in a single attempt]

Prerequisite: 1 1/2 years of high school algebra (or Mathematics 1 or 1SX or 1SY) and Trigonometry (or Mathematics 2 or 2S, which may be taken concurrently).

*Students are required to take the Algebra Diagnostic Exam prior to enrollment in portions equivalent to 3A.

A self-paced course covering the same material as Mathematics 3A—B—C—D. Credit is assigned in proportion to the work completed. Reduced credit for students who have taken part(s) of Mathematics 3A—B—C—D or 7A—B—C or 34A—B or 34S. May be repeated for credit up to a total of 16 units.

5A • Applied Differential Equations (4) Staff [B1]

Prerequisite: Mathematics 3C or 7C or the appropriate portions of 3S.

Intended for majors in physical sciences and engineering. First and second order linear differential equations, series solutions, method of undetermined coefficients and variation of parameters, Laplace transforms. (Not open to students who have received credit for Mathematics 119A.)

5B • Advanced Calculus with Applications, First Course (4) Staff [B1]

Prerequisites: Mathematics 5A or 119A

Vector analysis, matrices, systems of linear equations, eigenvalues, eigenvectors, systems of linear differential equations, vector calculus, partial derivatives, gradient, tangent plane, Lagrange multipliers, line integrals, Green's Theorem. Emphasizes applications in the physical sciences and engineering. (Not open to students who have received credit for Mathematics 160A)

5C • Advanced Calculus with Applications, Second Course (4) Staff [B1]

Prerequisite: Mathematics 5B

Multiple integrals including transformation of variables, surface integrals, the divergence theo-

rem, Stokes' Theorem, Laplace's equation, introduction to partial differential equations, Fourier series, orthogonal sets of functions. Emphasizes applications in the physical sciences and engineering.

6A • Introduction to Mathematical Computing (4) Staff [B1]

Prerequisite: Mathematics 3B or 7B or appropriate portions of 3S which may be taken concurrently.

Elementary Fortran programming. Design and programming of algorithms including root finding, numerical integration, the numerical solution of first order ordinary differential equations, and Monte Carlo methods. (Not open to students who have received credit for Engineering 3AB or Computer Science 5, 10 or 20.)

6B • Introduction to Non-numerical Computing (4) Staff [B1]

Prerequisites: Mathematics 3B or 7B or appropriate portions of 3S, and 6A.

Introduction to a structured language such as PASCAL; introduction to basic programming techniques appropriate for discrete algorithms such as pointers, lists trees, etc. (Not open to students who have received credit for EE/CS 3 or Computer Science 20.)

7A—B—C • Calculus (5-5-5) Staff [B1]

Prerequisite: 1 1/2 years of high school algebra and trigonometry

*Students are required to take the Algebra Diagnostic Exam prior to enrollment in Mathematics 7A.

Intended for students planning to major in mathematics or science who expect to use calculus creatively. Topics include differential and integral calculus in one variable, infinite series, elements of multivariable calculus, and applications. (Not open to students who have received credit for corresponding portions of Math 3ABC, 34AB, 3S, or 34S.)

8 • Introduction To Modern Algebra (4) Staff [B1]

Prerequisite: 1 1/2 years of high school algebra.

Topics include principle of induction, integers, integers modulo n , elementary number theory, division and Euclidean algorithms, prime factorization, complex numbers, polynomial rings and properties of polynomials, theory of equations, permutations. Intended to provide background for upper division mathematics courses.

8S • Self-Paced Introduction to Modern Algebra (4) Staff [B1 if 3 or more units in a single attempt]

Prerequisite: 1 1/2 years of high school algebra. This is a self-paced version of Mathematics 8.

9 • Elementary Linear Algebra (4) Staff [B1]

Prerequisite: 1 1/2 years of high school algebra.

Intended for majors and non-majors (a familiarity with complex numbers is required). Topics include vector spaces, linear transformations, vector operations, matrix operations, solutions of systems of linear equations, determinants, characteristic roots and vectors. Emphasis upon computational skills.

9S • Self-Paced Elementary Linear Algebra (4) Staff [B1 if 3 or more units earned in a single attempt]

Prerequisites: 1 1/2 years of high school algebra

This is a self-paced version of Mathematics 9.

10 • Mathematics for the Biological and Social Sciences. (4) Staff

Prerequisite: 1 year of high school algebra.

Intended for students with a need for general background in mathematics. Emphasizes computational skills and ideas. Open to students with no training in mathematics beyond high school.

Numbers, scientific notation, significant figures, approximate equality, rational powers, algebraic manipulation, the quadratic formula, summation, expected value, standard deviation, round off and truncation, propagation of error, manipulating large and small numbers, inequalities, coordinates, straight lines, linearization of data, least square method, use of tables, logarithms, growth and decay, flow charts, desk calculators. Not open to students who have completed other mathematics courses (except Mathematics 2, 2S or Mathematics 13).

12A • Modern Introductory Mathematics of Finance (4) Staff [B1]

Prerequisites: Mathematics 1 (or 1SX or 1SY) or equivalent high school mathematics.

Intended for students seeking a general background in mathematics of finance. Recommended for students interested in business, managerial science, actuarial science, economics, or general education. A pocket-sized calculator having an exponential and logarithm function is needed. Topics: simple and compound interest, annuities (both simple and general), loans with two interest notes, retirement plans and life insurance.

12B • Modern Intermediate Mathematics of Finance (4) Staff [B1]

Prerequisites: Mathematics 12A

Additional topics in the mathematics of finance: perpetuities, depreciation, appreciation and leveraging, bonds, selected topics.

13 • Mathematics Appreciation (3) Staff [B1]

A course intended to give general students a better understanding of the nature of mathematics, the character and origin of different subject fields in mathematics, and the sources of mathematical research.

14 • Elementary Mathematics Using BASIC (4) Staff [B1]

An introductory course in which the BASIC programming language is interwoven with the study of College Algebra and Elementary Functions. BASIC commands, numbers and variables, evaluating and using trigonometric and exponential functions, program looping, roots of polynomials, subscripted variables and arrays, elementary vector-matrix manipulations, random number generators and games of chance.

30A • Applied Finite Mathematics (4) Staff [B1]

Prerequisites: 1 1/2 years of high school algebra or Mathematics 1, 1SX, 1SY or 10.

Set theory, counting methods in combinatorial problems, probability, vectors and matrices, Markov chains. Applications to problems from, e.g., medicine, genetics, life insurance, transportation, marketing, population mobility, voting patterns, social influence processes.

30B • Applied Finite Mathematics (4) Staff [B1]

Prerequisites: 1 1/2 years of high school algebra or Mathematics 1, 1SX, 1SY or 10.

Vectors and matrices, linear systems, convex geometry, linear programming, game theory. Applications to optimization problems in economics and to conflict situations in the behavioral sciences.

31A—B • Discrete Mathematics (4-4) Staff [B1]

Prerequisite: 1 1/2 years high school algebra

Elements of discrete mathematics: sets, relations, functions, permutations, combinations, graphs, trees, generating functions, recurrence relations, groups, boolean algebras.

***34A • Introduction to Calculus and Statistics** (4) Staff [B1]

Prerequisite: 1 1/2 years of high school algebra.

**Students are required to take the Algebra Diagnostic Exam prior to enrollment.*

Calculus of one variable including differentiation curve sketching, max-min problems, exponential and logarithm functions, introduction to integration. (Not open to students who have received credit for Mathematics 3A or 7A or appropriate portions of 3S or 34S)

34B • Introduction to Calculus and Statistics (4) Staff [B1]

Prerequisite: Mathematics 34A or 3A or appropriate portions of 3S or 34S.

Techniques of integration, calculus of several variables including partial derivatives and max-min problems, multiple integrals, differential equations including separable equations and systems of linear equations. (Not open to students who have received credit for Mathematics 3B or 7B or appropriate portions of 3S or 34S.)

34C • Introduction to Calculus and Statistics (4) Staff [B1]

Prerequisite: Mathematics 34B or 3B or 7B or appropriate portions of 3S.

Probability, mean and variance, statistics, including estimation, confidence intervals, hypothesis testing for binomial and normal populations. (Not open to students who have received credit for PSTAT 33 or 133A.)

***34S • Introduction to Calculus** (1-8) Staff [B1 if 3 or more units earned in a single attempt]

Prerequisites: 1 1/2 years of high school algebra. **Students are required to take the Algebra Diagnostic Exam prior to enrollment.*

This is a self-paced version of Mathematics 34AB. Reduced credit for students who have taken corresponding parts of Math 3AB, 7AB, 34AB or 3S.

92 • Computer Laboratory (1) Staff

Offered each quarter in conjunction with specified lower division Mathematics classes listed in the Schedule of Classes. Students enrolling in any of the specified classes are eligible to enroll in this course concurrently. Students will become familiar with certain computer facilities and with some computing language(s) which will be used to solve problems designed to enrich and supplement the material in the specified Mathematics course. May be repeated in conjunction with

different courses for up to a total of three units of credit.

94 • Group Studies in Mathematics (1-4) Staff

Prerequisite: Consent of the instructor.

Lectures and discussions on special topics.

Upper Division courses**100A • Mathematics for Elementary Teaching I** (3) Staff

Prerequisites: High school algebra and geometry.

Set theory, numeration systems, properties of whole numbers and rational numbers, justification of computational procedures. Cannot be used to satisfy any requirement for an economics/mathematics, mathematics or mathematical sciences major.

100B • Mathematics for Elementary Teaching II (3) Staff

Prerequisites: High school algebra and geometry.

Geometric concepts including lines, points, planes, curves, triangles, area, decimal numbers, measurement including an introduction to the metric system, geometric transformations and symmetry, elementary concepts from probability. Cannot be used to satisfy any requirement for a mathematics, mathematical sciences or economics/mathematics major.

101A • Classical Number Systems (4) Staff [B1]

Prerequisites: Mathematics 3B or 7B or 34B or appropriate portions of 3S or 34S.

Especially suitable for prospective teachers. A conceptual rather than an axiomatic development starting with the natural numbers and progressing through the integral rational, real, and complex number systems, treating the basic properties of each. (Not open to those who have received credit for Mathematics 118A.)

101B • Elementary Real Analysis (4) Staff [B1]

Prerequisite: Mathematics 101A.

Especially suitable for prospective teachers. Basic theory of real valued functions of a single real variable, limits, continuity, sequential convergence, differentiation, integration, fundamental theorem of calculus. (Not open to those who have received credit for Mathematics 118A.)

102A • Modern Elementary Geometry (4) Staff [B1]

Prerequisites: Mathematics 3B or 7B or 34B or appropriate portions of 3S or 34S.

Especially suitable for prospective teachers. Critical review of the foundations and basic structure of plane and solid Euclidean geometry, based on the Birkhoff axioms.

102B • Transformation Geometry (4) Staff [B1]

Prerequisites: Mathematics 9, 9S, 102A, or 108A, or consent of the instructor

Especially suitable for prospective teachers. The motion and similarity groups of the Euclidean plane and 3-space with emphasis on their applications to geometric problems; examples of other transformation groups.

103 • Introduction to Group Theory (4) Staff [B1]

Prerequisite: Mathematics 8 or 8S.

Intended primarily for prospective teachers. Permutation groups, cyclic groups, theory of finite groups, group homomorphisms and isomorphisms. Abelian groups. Applications to number theory and geometry. (Not open to students who have received credit for Mathematics 111A.)

104A • Numerical Computation (4) Staff [B1]

Prerequisites: Mathematics 5A, 9

Study of computer programs for problems involving matrices, integral, differential equations, spline functions, zeros and extrema of functions, least squares and Monte Carlo techniques. Students will use the computer. (Not open to those students who have received credit for Computer Science 110.)

104AL • Laboratory in Numerical Analysis (1) Staff

Students will write computer programs to solve problems in 104A.

104B • Numerical Methods in Differential Equations (4) Staff [B1]

Prerequisites: Mathematics 104A and either Mathematics 5A or 119A.

Approximation by polynomials. Numerical integration. Numerical solutions of differential equations. Students will use the computer.

104BL • Laboratory in Numerical Analysis (1) Staff

Students will write computer programs to solve problems in 104B.

104C • Numerical Methods in Algebraic Problems (4) Staff [B1]

Prerequisite: Mathematics 104A, and either Mathematics 9, 9S or 108A.

Error analysis. Matrix norms. Iterative methods for solving systems of linear equations. Eigenvalues and eigenvectors. Students will use the computer.

104CL • Laboratory in Numerical Analysis (1) Staff

Students will write computer programs to solve problems in 104C.

106 • Number Systems of Algebra (4) Staff [B1]

Prerequisite: Mathematics 8, 8S or consent of the instructor.

Brief review of the integral, real, and complex number systems, development of p-adic numbers, algebraic integers, quaternions, Cayley numbers, extension fields of the rational numbers.

108A—B • Introduction to Linear Algebra (4-4) Staff [B1]

Prerequisite: Mathematics 8 or 8S

Vector spaces, inner product spaces, linear transformations, matrices, systems of linear equations, equivalence, determinants, eigenvectors and eigenvalues, similarity, diagonalization, normal matrices, congruence, orthogonal and unitary transformations.

108C • Advanced Linear Algebra (4) Staff [B1]

Prerequisite: Mathematics 108A—B.

Invariant factors and elementary divisors, ca-

nonical forms, topics from advanced matrix theory, applied linear algebra, and group representation theory.

109A • Introduction to Mathematical Logic (4) Staff [B1]

Prerequisite: Mathematics 8 or 8S or Philosophy 183.

Symbolic logic, propositional and predicate calculi, models, and formal proof systems. The notions of consistency and completeness. Proof of the completeness theorem for first-order languages. (Not open to students with credit for Philosophy 184.)

109B • Mathematical Logic (4) Staff [B1]
Prerequisite: Mathematics 109A or Philosophy 184.

Topics may include: Applications of proof theory in theorem proving and computer program verification. Gödel's incompleteness theorem, model theory.

110 • Set Theory (4) Staff [B1]

Fundamentals of set theory, ordinal numbers, cardinal arithmetic, transfinite methods.

111A—B—C • Introduction to Abstract Algebra (4-4-4) Staff [B1]

Prerequisites: Mathematics 8 or 8S and 108A or consent of the instructor.

Groups, rings, fields, Galois theory. Credit will not be given for both 111A—B and 136A—B.

112A—B • Projective Geometry (4-4) Staff [B1]

Prerequisite: Mathematics 3D or 7C or appropriate portions of 3S.

One- and two-dimensional analytic projective geometry.

113 • Non-Euclidean Geometry (4) Staff [B1]

Prerequisite: Mathematics 3D or 7C or appropriate portions of 3S or consent of the instructor.

Primarily an introduction to hyperbolic geometry with some discussion of other non-Euclidean systems.

114AB • Geometry and Convexity (4-4) Staff [B1]

Prerequisites: Mathematics 3D or 7C, 9 or 108A or consent of instructor.

An introduction to the study of convex bodies and surfaces, (following a development of basic metric topology and affine algebra), with special emphasis on mathematical methods which are important in many fields of mathematics

115A • Introduction to Number Theory (4) Staff [B1]

Prerequisites: Mathematics 3D or 7C or appropriate portions of 3S, and Mathematics 8 or 8S.

Divisibility, congruences, primitive roots and indices, quadratic residues and the quadratic reciprocity law, number-theoretic functions.

115B—C • Number Theory (4-4) Staff [B1]

Prerequisite: Mathematics 115A.

Diophantine equations, the distribution of primes, quadratic forms, continued fractions and the approximation of real numbers, algebraic number theory, partitions, density problems.

116 • Combinatorial Analysis (4) Staff [B1]

Prerequisite: Mathematics 8 or 8S.

Elementary counting principles, binomial coefficients, generating functions, recurrence relations, the principle of inclusion and exclusion, distributions and partitions, systems of distinct representatives, applications to computation.

118A—B—C • Introduction to Real Analysis (4-4-4) Staff [B1]

The real number system, elements of set theory, continuity, differentiability, the Riemann integral, functions of bounded variation, implicit function theorems, convergence processes, special topics.

119A • Differential Equations (4) Staff [B1]

Prerequisite: Mathematics 3C or 7C or the appropriate portions of 3S.

First and second order linear differential equations, linear equations with constant coefficients, series solutions, method of undetermined coefficients, Laplace transform. (Not open to students who have received credit for Mathematics 5A.)

119B • Differential Equations (4) Staff [B1]

Prerequisite: Mathematics 5A or 119A.

Existence and uniqueness by successive approximations, solutions of systems of differential equations by vector methods, regular singular points, series solutions, special functions.

119C • Differential Equations (4) Staff [B1]

Prerequisite: Mathematics 119B.

Boundary value problems for partial differential equations, the method of separation of variables, eigenvalues and eigenfunctions, autonomous systems, stability, periodic solutions.

122A—B • Introduction to Theory of Complex Variables (4-4) Staff [B1]

Prerequisite: Mathematics 3D or 5C or 160B or appropriate portions of 3S.

Complex numbers, functions, differentiability, series, extensions of elementary functions, complex integration, calculus of residues, conformal maps, mapping functions, applications.

124A • Complex Variables for Applications (4) Staff [B1]

Prerequisites: Mathematics 5C and either Mathematics 5A or Mathematics 119A.

Complex numbers and analytic functions. The Cauchy-Riemann equations. Cauchy's Theorem. Power series and Laurent series. Evaluation of integrals by means of Residue Calculus. Analytic maps with application to the Dirichlet problem.

124B • Advanced Differential Equations (4) Staff [B1]

Prerequisite: Mathematics 124A or 122AB and 5A or 119A.

Special functions of mathematical physics; Bessel functions, Legendre polynomials, Hermite functions, etc. Introduction to Hilbert spaces. Introduction to partial differential equations

124C • Selected Topics in Mathematics for Physical Applications (4) Staff [B1]

Prerequisite: Mathematics 124B.

The course matter will be chosen from topics such as the theory of distributions, partial differ-

ential equations, integral equations, Fourier transforms, asymptotic expansions, etc.

125A—B—C • Fluid Mechanics (4-4-4) Staff [B1]

Prerequisites: Mathematics 5C and either Mathematics 5A or Mathematics 119A.

Formulation and basic properties of the principal mathematical models used in fluid mechanics. Continuity equation. Equations of motion. Bernoulli's equation. Reynold's number, ideal irrotational flow and surface waves on water, linear shallow-water theory, inviscid flow with vorticity, viscosity, instabilities.

131 • Linear Optimization and Game Theory (4) Staff [B1]

Prerequisite: Mathematics 108A or consent of the instructor.

Solving linear inequalities and the simplex method for finding the "best" situation. The duality theorem. Applications will include the equilibrium theorem of mathematical economics and the theory of two-person games. Opportunities will be available for students to use the computer.

132A—B—C • Introduction to Operations Research (4-4-4) Staff [B1]

Prerequisites: Mathematics 3ABC or equivalent. Some experience with vectors and matrices is desirable for 132A. Some experience with probability is desirable for 132B. 132A and 132B are prerequisite to 132C.

The first two quarters present a survey of the problems and techniques in operations research of concern to the management sciences and engineering. The third quarter goes further into this material and covers more advanced topics. Although the first two quarters are accessible to students with an introductory background in mathematics, these courses will proceed rapidly to the intermediate level.

132A • Deterministic methods

Linear programming: the simplex method, applications to the transportation and assignment problems, problem formulation and computation; introduction to nonlinear programming; dynamic programming; network analysis: shortest route, minimal spanning tree, and maximal flow problems, PERT including the critical path method

132B • Probabilistic models

Review of probability; queuing theory: waiting line models, birth and death processes, applications; inventory theory; Markov chains and applications; game theory; computer simulation.

132C • Advanced topics

Markovian decision models; component and system reliability; decision analysis; list and area searching; linear optimization: duality, reduction of games, sensitivity analysis, special techniques and algorithms; nonlinear optimization: quadratic and convex programming; integer programming; classic case studies in operations research.

136A—B—C • Modern Algebra with Applications (4-4-4) Staff [B1]

Prerequisite: Mathematics 8 or 8S.

An introduction to some of the algebraic structures that arise in applications of mathematics. Topics include relations, graphs, semigroups, groups, rings, fields, boolean algebras, and other topics as time permits. Applications in 136C will include a substantial introduction to the mathematical theory of finite state machines. In some years Mathematics 138 may be offered in

place of Mathematics 136C. (Credit will not be given for both Mathematics 136AB and 111AB.)

137A—B • Graph and Network Theory (4-4) Staff [B1]

Prerequisite: Math 9, 9S or 108A and Math 31AB or 111A or 136A

Basic elements of graph theory including paths, circuits, trees, planarity, duality, covering, matching, elements of network theory.

138 • Algebraic Coding Theory (4) Staff [B1]

Prerequisite: Mathematics 136A—B or 111A—B.

Theory and construction of error correcting codes.

139 • Topics in Discrete Mathematics With Applications (4) Staff [B1]

Prerequisites: Mathematics 109A or 111A or 136A or permission of instructor

Topics in combinatorial algebra and logic, and other aspects of discrete mathematics with applications. Possible topics include combinatorial semigroups, variable-length codes, information-lossless graphs, Thue systems and their word problems, the sequences of Morse and Thue, tiling problems, resolution theorem-proving.

140A—B—C • Introduction to Topology and Differential Geometry (4-4-4) Staff [B1]

Prerequisites: Mathematics 3C or 7C or appropriate portions of 3S and Mathematics 9, 9S or 108A.

An introduction to modern topology and differential geometry. Topics may include basic point-set topology, curves and surfaces in Euclidean space, manifolds and vector fields, Riemannian geometry, fundamental group.

141 • Multilinear Algebra (4) Staff [B1]

Prerequisite: Mathematics 108B.

Duality, multilinear mappings, tensor spaces, symmetry classes, graded algebras, linear transformations on tensor spaces, induced transformations, inner products on tensor spaces, elementary representation theory.

150 • Introduction to Automata and Formal Language Theory (4) Staff [B1]

Prerequisite: Mathematics 136A

Sequential functions. Finite-state acceptors and algebraic characterizations of the class of regular sets. Context-free grammars and languages, parsing algorithms. (Not open to students who have received credit for Computer Science 120A or 150.)

151 • Introduction to Computability Theory (4) Staff [B1]

Prerequisite: Mathematics 150

Representations of algorithms, arithmetizations, Kleene Normal Form Theorem. Partial recursive and total recursive functions. Decidability and undecidability. Applications to topics such as word problems, questions of arithmetic, and questions of mathematical logic. (Not open to students who have received credit for Computer Science 120B or 151.)

154 • Introduction to the Theory of Computational Complexity (4) Staff [B1]

Prerequisites: Mathematics 150 and any one of the following: Mathematics 136B, 137AB, 151,

Computer Science 131

What is the inherent difficulty of a problem? Introduction to concrete complexity with examples from searching and sorting, and other non-numeric problems. How does the solution of one problem help in solving another? Introduction to complexity theory.

160A—B • Advanced Calculus (4-4) Staff [B1]

Prerequisite: Mathematics 3D or 7C or 5C or appropriate portions of 3S.

Functions of one variable derivatives: the Riemann integral, improper integrals; power series; uniform convergence. Functions of several variables; partial derivatives; maximum-minimum problems; Lagrange multipliers; the implicit and inverse function theorems; multiple integrals; line and surface integrals; the theorems of Green, Gauss, and Stokes; applications.

170 • Mathematical Literature (4) Staff [B1]

Prerequisite: Mathematics 3A—B, 8, or 8S or consent of the instructor.

Literature sources in the mathematical sciences; the structure of expository and research papers in mathematics; selected readings of recent prize winning expository papers; how to write mathematics. Students will prepare expository papers on subjects within their mathematical competence.

172 • Introduction to Actuarial Mathematics (4) Staff [B1]

Prerequisites: Mathematics 12A recommended

A survey of actuarial mathematics with some attention to life insurance, pension plans and casualty insurance.

190 • Special Topics in Mathematics (4) Staff [B1]

Prerequisite: Consent of the instructor.

Information about the special topics to be presented may be obtained from the office of the Department of Mathematics.

190 Topics will have an appended letter, e.g. 190A, 190B... A student may take all of these topics but will not receive credit for any which are repeated (e.g. one may take 190A and 190B for credit but no credit will be awarded if 190A is taken twice.) No more than eight units of major credit will be given, but course may be repeated an unlimited number of times.

192 • Computer Laboratory (1) Staff

Offered each quarter in conjunction with specified upper division Mathematics classes listed in the Schedule of Classes. Students enrolling in any of the specified classes are eligible to enroll in this course concurrently. Students will become familiar with certain computer facilities and with some computing language(s) which will be used to solve problems designed to enrich and supplement the material in the specified Mathematics course. May be repeated in conjunction with different courses for up to a total of six units of credit. Units do not count for upper division Mathematics major requirements.

194 • Group Studies for Advanced Students (1-4) Staff

Prerequisite: Consent of the instructor.

Lectures and discussions on special topics. Enrollment normally limited to 12 or fewer students.

***199 • Independent Studies in Mathematics** (1-5) Staff

199 courses are limited to no more than 5 units in one quarter and no more than 12 units total. Graduate level Mathematics course are listed below the Probability and Statistics courses.

*See N-2 198/199 independent studies unit limitations.

Probability and Statistics Lower Division

33 • Statistics (4) Staff [B1]

Random variables, sampling distribution, estimation, hypotheses testing, correlation and regression, other topics from statistics. (Not open to students who have received credit for Mathematics 34C or PSTAT 133A.) (Formerly Mathematics 33.)

Upper Division

105 • Non-Parametric Statistical Tests (4) Staff [B1]

Prerequisite: PSTAT 33 or Mathematics 34C or the equivalent.

An applied statistics course which examines modern, practical (distribution-free) significance tests: permutation tests, sign tests, ranking methods. This course does not require calculus and is designed for students in engineering, the physical, biological, and social sciences, and mathematics. (Formerly Mathematics 105.)

107 • Discrete Probability Theory (4) Staff [B1]

A systematic development of probability theory for finite sample spaces, conditional probability, independence, counting techniques, binomial distribution, random variables, expectation, and other topics such as Markov chains, Poisson distributions and hypothesis testing. (Formerly Mathematics 107.)

112 • Elementary Design of Experiments (4) Staff [B1]

Prerequisite: One quarter of lower division statistics

Cooperative course with Psychology Department dealing with statistical methods needed by experimenters. Design of experiments, analysis of variance testing, hypotheses and confidence intervals are all included along with special topics. One hour per week will deal with applications and exercises. (Cannot be used to satisfy any requirements for a mathematics or mathematical sciences major without written departmental approval.)

117 • Finite Markov Chains (4) Staff [B1]

Prerequisite: PSTAT 107 or PSTAT 120A

Classification and canonical forms for finite Markov chains, limit laws, applications to the physical and social sciences.

120A—B—C • Probability and Statistics (4-4-4) Staff [B1]

Prerequisites: Mathematics 3C or 7C or appropriate portions of 3S.

Basic concepts of probability, limit theorems, discrete and continuous random variables, derived distributions, some statistical applications, point estimation, random sampling, tests of hypotheses, confidence intervals. (Not open to stu-

dents who have received credit for Probability and Statistics 121A-B-C. Formerly Mathematics 120ABC).

121A • Probability and Statistics for Computer Science I (4) Staff [B1]

Prerequisite: Math 3C or 7C or appropriate portions of 3S and PSTAT 107

Basic concepts of probability; random variables and distributions; binomial, normal and other probability models; sampling distributions and elements of statistical inference. (Not open to students who have received credit for Prob/Stat 120A. Formerly Mathematics 121A.)

121B • Probability and Statistics for Computer Science II (4) Staff [B1]

Prerequisites: PSTAT 121A or 120A or 133C

Transformations of discrete and continuous random variables, random number generation, different methods and efficiency evaluation, tests of randomness including the chi-square test, the serial test, the run test, etc.; simulation methods for some simple problems of statistical inference. (Formerly Mathematics 121B.)

121C • Probability and Statistics for Computer Science III (4) Staff [B1]

Prerequisite: PSTAT 120B or 121B

Will survey the various computer packages available for statistical analysis including SPSS, BMD Minitab, etc. The use of these packages in solving statistical problems will be discussed utilizing practical examples. (Formerly Mathematics 121C.)

122A—B • Design and Analysis of Experiments (4-4) Staff [B1]

Prerequisites: Mathematics 9 or equivalent and either PSTAT 120A—B or 121A—B (120B or 121B can be taken concurrently).

Linear models and analysis of variance; least squares theory; regression and correlation; design of experiments (both classical and optimal approaches); some applications of regression analysis in practical research (descriptive models method of steepest ascent, prediction).

124A—B • Ranking and Selection (4-4) Staff [B1]

Prerequisites: PSTAT 120A—B or 121A—B (120B and 121B may be taken concurrently).

Ranking and selections from the parametric and nonparametric point of view, major emphasis on fixed sample size procedures. Both the indifference zone approach as well as the subset approach are considered. Applications to normal, binomial and multinomial problems; complete ordering comparisons with a control and the selection of the test out of k populations.

133A—B—C • Introduction to Probability and Statistical Methods (4-4-4) Staff [B1]

This course will introduce basic ideas of probability and cover various topics in statistical methods without the use of calculus. Topics: basic ideas of probability, random variables and distributions, expectation and variance, binomial, normal, and other probability models. Statistical inference point estimation and confidence; intervals, testing. Statistical tests based on the normal, t , χ^2 , and F distributions correlation and regression. Other topics discussed will include elementary design of experiments, analysis of variance, some ideas of sampling, non-parametric statistics. (Not open to students who have

received credit for Math 34C or PSTAT 33 or to math majors)

134 • Sequential Analysis (4) Staff [B1]

This course will cover sequential methods and the associated statistical inference. Topics discussed will include sequential probability ratio test and its optimal properties, application to sequential testing, t -test, sequential estimation.

Graduate Courses in Mathematics

The department does not offer all the courses listed below each year, but does offer the following courses every year:

Math 200A—B—C, Math 220A—B—C, Math 226A—B—C, Math 204A, 247, 248, P/S 207A—B—C, P/S 213A—B—C.

The department offers approximately six other one-year courses in Mathematics and two in Probability and Statistics each year and two in Computer Science each year

Graduate courses of interest to Computer Science students are listed under the Mathematics offerings. These courses are numbered 251, 252, 253, 254, 261

200A—B—C • Real and Complex Analysis (5-5-5) Staff

Prerequisite: Mathematics 118A—B—C, or equivalent

Real and complex analysis, measure theory, and rudiments of functional analysis.

204A—B—C • Numerical Methods for Partial Differential Equations (4-4-4) Staff

Prerequisites: Mathematics 104A—B—C, or Mathematics 108A; 118A, 119A; or consent of the instructor.

Topics from Numerical treatment of partial differential equations, elliptic boundary value problems, hyperbolic and parabolic equations. Stability, error estimates and accelerated convergence. Numerical treatment of integral equations. Variational techniques. Newton method applied to operator equations. Monotone operators.

205A—B—C • Topics in Applied Linear Algebra (4-4-4) Staff

Prerequisite: Mathematics 108A—B, or equivalent, or consent of the instructor.

Selected topics in applied linear algebra. The topics will vary from quarter to quarter.

206A—B—C • Mathematical Programming (4-4-4) Staff

Prerequisites: Consent of the instructor.

Topological vector spaces. Separation, extreme points and fixed point properties of convex sets. Systems of linear inequalities and games. Minimax, equilibrium points and variational inequalities. Linear and quadratic programming. Kuhn-Tucker theorem. Simplex method and other algorithms. Dual systems of vector spaces and polarity. Analysis of convex functions. Fenchel's duality for convex programming. Conditions for an extremum in general mathematical programming problems.

209A—B • Set Theory (4-4) Staff

Prerequisite: Consent of instructor.

Study of Axiomatic set theory; topics include relations and functions, orderings, ordinal and cardinal numbers and their arithmetic, transfinite

constructible sets, consistency and independence results of Godel and Cohen.

210A—B—C • Advanced Topics in the Theory of Real Functions (4-4-4) Staff

Prerequisites: Mathematics 200A—B—C.

Special topics chosen by the instructor. Topics may include: the integrals of Perron, Denjoy, Khintchine and others; the Baire classification of functions and the Borel classification of sets; the measure problem, density theorems, negligible sets, and functions of several real variables.

211A—B—C • Advanced Topics in Complex Variables (4-4-4) Staff

Prerequisite: Consent of the instructor

Special topics chosen by the instructor. Possible topics include: several complex variables; Riemann surfaces, potential theory, Hp spaces; entire and meromorphic functions; cluster sets; conformal mappings.

218A—B—C • Combinatorial Mathematics (4-4-4) Staff

Prerequisites: Mathematics 108A—B and 111A—B

Principle of inclusion and exclusion, recurrence relations, Ramsey's theorem, Polya's theorem, partially ordered sets, Mobius functions, arrangements with restrictions, systems of distinct representatives. Latin squares and rectangles, block designs, finite geometries, Hadamard matrices, difference sets, $(0, 1)$ matrix theory, extremal problems.

220A • Modern Algebra (4) Staff

Prerequisites: Mathematics 108A—B, 111A—B. Group theory.

220B • Modern Algebra (4) Staff

Prerequisite: Mathematics 108A—B, 111A—B. Ring theory.

220C • Modern Algebra (4) Staff

Prerequisite: Mathematics 220A.

Field theory and Galois theory.

222A—B—C • Topics in Group Theory (4-4-4) Staff

Prerequisite: Consent of the instructor. Selected topics in group theory.

223A—B—C • Topics in Ring Theory (4-4-4) Staff

Prerequisite: Consent of the instructor. Selected topics in ring theory.

224A—B—C • Topics in Linear Algebra (4-4-4) Staff

Prerequisite: Consent of the instructor. Selected topics in linear algebra

225A—B—C • Topics in Number Theory (4-4-4) Staff

Prerequisite: Consent of the instructor. Selected topics in number theory.

226A—B—C • General Topology (4-4-4) Staff

Prerequisite: Mathematics 118A or equivalent.

Topological spaces and continuous functions. Convergence. Compactness. Connectedness. Product and quotient spaces, direct and inverse limits. Metric spaces. Completion and compactification. Normal spaces Paracompactness and

metrization. Baire category. Function spaces. Manifolds.

Special topics (retracts, homotopy, maps into spheres, covering spaces, fiber spaces).

227A—B—C • Advanced Topics in Geometric and Algebraic Topology (4-4-4) Staff

Prerequisite: *Consent of the instructor.*

Topics, varying from year to year, include piecewise linear and differential topology, manifolds, fiber bundles and fiber spaces, homotopy theory, and spectral sequences.

228A—B—C • Topics in Functional Analysis (4-4-4) Staff

Prerequisite: *Mathematics 200A—B—C or consent of the instructor.*

Selected topics in functional analysis.

229A—B—C • Hilbert Space (4-4-4) Staff

Prerequisite: *Mathematics 200A—B—C.*

Operator theory, $*$ -algebras of operators, both weakly closed (von Neumann algebras) and norm closed (C^* -algebras). Unitary representations of locally compact groups and $*$ -representations of C^* -algebras.

230A—B—C • Topological Groups (4-4-4) Staff

Prerequisites: *Mathematics 220A, 226A—B—C.*

General properties of topological groups. Unitary representations of compact groups. Duality and structure of locally compact Abelian groups. Haar measure. Unitary representations of locally compact groups. Harmonic analysis. Special topics.

232A—B—C • Algebraic Topology (4-4-4) Staff

Prerequisites: *Mathematics 220A—B—C, 226A—B—C.*

Homotopy groups. Fiber spaces. Singular and simplicial homology. Cohomology. Products. Duality theorems.

233A—B—C • Nonlinear Functional Analysis (4-4-4) Staff

Prerequisites: *Mathematics 200A—B—C and 226A—B—C*

General theory of locally convex topological vector spaces. Fixed point theory and applications in nonlinear analysis. Convex analysis and optimization problems.

240A—B—C • Differential Geometry (4-4-4) Staff

Prerequisite: *Consent of the instructor.*

Differential manifolds, tangent vectors, differential forms, vector bundles. Riemannian geometry. Geodesics, minimal submanifolds, first and second variation of arc length. Special topics.

243A—B—C • Ordinary Differential Equations (4-4-4) Staff

Prerequisite: *Consent of the instructor.*

Ordinary differential equations in real and complex domains. Existence and differentiability of solutions. Analysis of singular points. Poincaré-Bendixson theorem, perturbation theory, Sturm-Liouville theory, asymptotic expansions, stability.

244A • Advanced Mathematical Models in Modern Economics (4) Staff

Prerequisite: *Consent of the instructor.*

Mathematical models in modern economics

selected from these topics: demand, production, input-output, competition, equilibrium, stability, cycles, control, growth, welfare.

244B • Advanced Mathematical Models in Modern Engineering Science (4) Staff

Prerequisite: *Consent of the instructor.*

Mathematical models in modern engineering sciences selected from these topics: networks, mechanical systems, optics, electromagnetics, energetics, information, entropy statistical mechanics, quantum mechanics, solid state, plasmas.

244C • Advanced Mathematical Models in Modern Bioscience (4) Staff

Prerequisite: *Consent of the instructor.*

Mathematical models in modern bioscience selected from these topics: bioenergetics, biocybernetics, biochemical and cell models, tissue and organ, models, epidemiology, ecology and evolution, complexity, verification, quantitative dynamics control.

245A—B—C • Methods of Applied Mathematics (Linear Theory) (4-4-4) Staff

Prerequisite: *Mathematics 118A or consent of the instructor.*

Ordinary differential equations with one and two point boundary data. Linear integral equations, Green's functions. Eigenvalue problems. Fourier integral. Partial differential equations. Equations with initial and boundary data, calculus of variations, applications to classical and quantum mechanics, electro-magnetism, optics. Systems of differential equations, stability, feedback, optimal control, frequency domain methods, random processes and differential equations, analog and digital filters, unsteady behavior, applications to electrical and mechanical control systems.

246A—B—C • Partial Differential Equations (4-4-4) Staff

Prerequisite: *Mathematics 118A or consent of instructor.*

Cauchy-Kowaleski theorem. Characteristics. Theory of initial value and boundary value problems for elliptic, hyperbolic and parabolic equations. Existence of uniqueness of solutions.

247 • Numerical Solution of Ordinary Differential Equations (4) Staff

Prerequisite: *Mathematics 104B.*

Solution of boundary value problems; Dahlquist stability; linear eigenvalue problems; stiff equations.

248 • Matrix Computations (4) Staff

Prerequisite: *Mathematics 104C.*

LR-QR algorithms; error estimate for the solution of linear equations; linear least squares problem; linear programming; techniques for sparse matrices.

250A—B—C • Mathematical Logic (4-4-4) Staff

Prerequisite: *Consent of the instructor.*

Introduction to axiomatic set theory. Equational logic. Formal systems in the first-order predicate calculus. Godel's completeness and incompleteness theorems. The existence of unsolvable problems. Introduction to the theory of recursive functions. Survey of model theory, including the ultraproduct construction, compactness theorem, elementary extensions, Craig's interpolation lemma, saturated models.

251A—B—C • Foundations of Computer Science (4-4-4) Staff

Prerequisites: *CPSCI 150 or consent of the instructor.*

Basic concepts in the theory of computation. Formal models of algorithms and algorithmic systems—their completeness, correctness, complexity, and representation. Automaton and formal language theory. Program schemes. Introduction to computational complexity.

252A—B • Theory of Formal Languages (4-4) Staff

Prerequisite: *Mathematics 25 1A.*

Structure theory of classes of languages and their specification by means of generative devices, machines, and algebraic characterizations. Decidable and undecidable properties and the complexity of decidable properties. Much of the theory will be developed as an extension of the theory of context-free languages.

253 • Computability and Recursive Functions (4) Staff

Prerequisite: *CPSCI 151.*

Turing machines and other abstract notions of computability. Their equivalence and Church's hierarchies of recursive functions and predicates. Computational complexity.

254A—B—C • Algorithms and Complexity (4-4-4) Staff

Prerequisite: *CPSCI 180.*

Basic topics in the study of algorithms and concrete complexity, arithmetic and analytic complexity, and combinatorial optimization. Topics include: information theoretic arguments; searching graphs; NP-complete problems; lower bounds based on algebraic methods; FFT techniques; parallel computing.

260AA—ZZ • Seminars in Mathematics (1-6) Staff

Prerequisite: *Consent of instructor.*

Topics in algebra, analysis, applied mathematics, combinatorial mathematics, functional analysis, geometry, statistics, topology, by means of lectures and informal conferences with members of staff. May be repeated for credit.

261AA—ZZ • Seminars in Computer Science (1-6) Staff

Topics in analysis of algorithms, automaton theory, computational complexity, formal language theory, foundations of automatic programming, mathematical software, numerical computation, program structure and verification. Lectures or informal conferences will be held with members of the staff. May be repeated for credit.

270A—B—C • Special Topics in Algebra (4-4-4) Staff

Prerequisite: *B.A. or B.S. with mathematics major, or consent of instructor.*

Intended for students working for Junior College Credential or M.A. in Education with mathematics emphasis. Particular consideration of the relation of special and advanced topics to the junior college and secondary curriculum.

271A—B—C • Special Topics in Geometry and Analysis (4-4-4) Staff

Prerequisite: *B.A. or B.S. with mathematics major, or consent of instructor.*

Intended for students working toward a Junior College credential or M.A. in Education with mathematics emphasis. Particular consideration

of the relation of special and advanced topics to the junior college and secondary curriculum.

280 • Surveys in Contemporary Mathematics (4) Staff

Prerequisite: Consent of the instructor.

An expository treatment of a topic of current interest in mathematics with sufficient detail to impart the flavor of the field. Where appropriate applications to other fields of mathematics will be included. The course is designed for the non-specialist in the area treated. The topics will vary from quarter to quarter.

290 • Teaching and Learning Mathematics (1) Staff

Consideration of ideas about the process of learning mathematics and discussion of approaches to teaching.

596 • Directed Reading & Research (1-6)

598 • Master's Thesis Research and Preparation (1-6)

599 • Ph.D. Dissertation Preparation (1-6)

Graduate Courses in Probability and Statistics

201A—B • Statistical Design for Experimenters (4-4) Staff

Prerequisites: At least one quarter of statistics. High school algebra is required but not calculus. Any waiver of the statistics prerequisite must be approved by the instructor.

Covers the basic material in design of experiments including one-way layout, rectangular blocks, latin squares, etc. Least squares and regression theory is covered for linear and non-linear models. Response surface methodology

and associated topics are also included. Not to be taken for graduate credit by Ph.D. students in Statistics.

207A—B—C • Statistical Theory (4-4-4) Staff

Prerequisites: PSTAT 120A—B—C or consent of the instructor.

Univariate and multivariate distribution theory; generating functions; inequalities in statistics; order statistics; estimation theory; maximum likelihood estimation; sufficiency; Rao-Blackwell theorem; testing hypotheses; ranking and selection; sequential vs. nonsequential techniques.

213A—B—C • Probability Theory (4-4-4) Staff

Prerequisite: PSTAT 120A—B—C or equivalent.

Foundations of probability, distribution functions, characteristic functions, stochastic processes, central limit problem, martingales, stationary processes.

214A—B—C • Introduction to Stochastic Processes (4-4-4) Staff

Prerequisites: Mathematics 118A—B and PSTAT 120A—B—C.

Random walks, renewal theory, Markov processes, branching processes, information theory.

215A—B—C • Statistical Decision Theory (4-4-4) Staff

Prerequisite: Consent of instructor.

A basic introductory mathematical statistics course in which statistical concepts and procedures are developed and examined from the point of view of game theory, optimization and decision theory.

216A—B—C • Multivariate Analysis (4-4-4) Staff

Prerequisite: PSTAT 120A—B—C and Math 108A—B

Statistical Theory associated with the multivariate normal, Wishart and related distributions, partial and Multiple Correlation, principal components. Hotelling's T^2 -statistic, multivariate linear models, classification and discriminate analysis. Other topics may include invariance, admissibility, minimax, James-Stein estimates, multivariate probability inequalities, majorization and Schur functions.

217A—B—C • Design of Experiments (4-4-4) Staff

Prerequisites: PSTAT 120A—B—C and Mathematics 108A—B or consent of the instructor.

Linear models and the analysis of variance; regression and least squares theory; contingency table analysis; method of steepest ascent; ridge regression.

219 • Statistics of Life Testing and Reliability (4) Staff

Prerequisites: PSTAT 207A—B—C or consent of the instructor.

Will discuss probability failure models and associated test procedures. Topics will include: parametric and nonparametric life-testing procedures, estimation of hazard rates, component and system reliability, maintenance policies and renewal theory.

262AA—ZZ • Seminars Probability and Statistics (1-6) Staff

Topics of current research interest in probability and/or statistics, by means of lectures and informal conferences with members of staff. May be repeated for credit.

596 • Directed Reading & Research (1-6)

598 • Master's Thesis Research and Preparation (1-6)

599 • Ph.D. Dissertation Preparation (1-6)

Medieval Studies

Advisory Committee and Faculty

(See appropriate departmental entries for faculty information.)

*Larry M. Ayres, Ph.D., *Professor of Art*.

Alva W. Bennett, Ph.D., *Associate Professor of Classics*.

Alfredo A. Bonadeo, Ph.D., *Associate Professor of Italian*.

Walter H. Capps, Ph.D., *Professor of Religious Studies*.

Francis A. Dutra, Ph.D., *Associate Professor of History*.

*Frank C. Gardiner, Ph.D., *Associate Professor of English (Chairperson of Committee)*.

*C. Warren Hollister, Ph.D., *Professor of History*.

Ursula R. Mahlendorf, Ph.D., *Associate Professor of German*.

Raimundo Panikkar, Th.D., Ph.D., D.Sc., *Professor of Religious Studies*.

*Alejandro Planchart, Ph.D., *Associate Professor of Music*.

*Harvey L. Sharrer, Ph.D., *Associate Professor of Spanish and Portuguese*.

John T. Waterman, Ph.D., *Professor of German*.

*Member of Medieval Studies Committee

Concerns of the program

The major in Medieval Studies is designed to allow for a variety of approaches to the study of medieval civilization. Courses are available in art history, drama, English and other European literatures as well as comparative literature, history, music, and religious studies. Emphasis varies in individual programs, but the basic goal is to achieve as clear and full an undertaking as possible of the culture of medieval Europe. By developing a broadly based understanding of medieval culture, which represents a civilization remote from our own yet related to it, we can hope to attain clearer perspectives on our own age.

The program is intended to serve students interested in an undergraduate liberal arts major as well as those who plan to pursue graduate studies in the field. In consultation with members of the committee, students will set up individual programs structured around their special interests. Students should maintain close contact with their advisers in order to inform themselves concerning courses and extra-curricular lectures and discussions in the medieval field.

Bachelor of Arts

Preparation for the major

Required: History 4A—B. A reading knowledge of Latin and a modern European language will be necessary for those who plan to continue their studies on the graduate level.

Upper Division major

Required: Forty units from the following list, the selection to consist of related courses forming a coherent program and to be approved by a member of the Advisory Committee.

Art

- 153A • Medieval Art: Early
- 153B • Medieval Art: Byzantine
- 153C • Medieval Art: Romanesque
- 153D • Medieval Art: Gothic
- 153E • Medieval Art: Italy, 13th and 14th Centuries
- 153F • Gothic Painting 1200-1400
- 155B • 15th Century Painting in Northern Europe

Comparative Literature

- 120 • Medieval Literature

Dramatic Art

- 160B • Development of Dramatic Art

English

- 111 • The History of the English Language
- 115 • Medieval Literature
- 152A • Chaucer: Canterbury Tales
- 152B • Chaucer: Troilus and Criseyde and the Minor Poems
- 157 • English Renaissance Drama
- * 197 • Senior Seminar

*Course content varies; applies only where appropriate to Medieval Studies.

French

- 109A • Introduction to French Literature
- 136A • Medieval Epic Romance
- 136B • Lyric Poetry of the Middle Ages
- 136C • Literary Aspects of Medieval Culture
- 137X • Love in the Medieval French Narrative
- 138X • The Medieval French Drama

German

- 120 • History of the German Language

History

- 113B • The Roman Empire
- 113Q • Special Studies in Roman History
- 114A—B • Christianity through the Reformation
- 115 • The Fall of Rome and the Birth of Europe 300-1050
- 115F • The Medieval Church
- 115G • Medieval England A.D. 1000-1485
- 115Q • Special Studies in Medieval European History
- 116 • The Civilization of the High Medieval Ages 1050-1350
- 117A—B • Thought & Letters in Medieval Europe
- 117Q • Special Studies in Medieval Culture
- 119 • The Medieval Town and Countryside
- 120A • Renaissance-Reformation
- 145A—B • The Medieval East in the Middle Ages
- 150A • Medieval Spain
- *150Q • Special Studies in Spanish History
- 155A • History of Portugal
- *195 • The Methods of History

*Course content varies; applies only where appropriate to Medieval Studies

Italian

- 110A—B—C • Dante: La Divina Commedia
- 114X—Y—Z • Masterpieces of the Italian Middle Ages in Translation
- 116X • Machiavelli
- 139X • Survey of Literature in Translation

Latin

- 103 • Medieval Latin Readings
- 106 • Introduction to Poetry
- 116A • Cicero: Essays and Letters
- 116B • Cicero, Orations
- 117 • Prose of the Empire

Course content varies; applies only where appropriate to Medieval Studies.

Medieval Studies

- 100 • Aspects of Medieval Civilization
- **199 • Independent Studies
- **See section N-2 for 198/199 independent studies unit limitations.

Medieval Studies Upper Division courses

100 • Aspects of Medieval Civilization (4) Staff

An interdisciplinary course which examines a cultural whole: the political and intellectual history,

the literature, the art and architecture of a given center of medieval civilization (e.g., pre-conquest of England, medieval Spain or the court of Charlemagne). Topics will vary and the course may be repeated for credit.

199 • Independent Studies. Special Interdisciplinary Study in Medieval Themes (1-5).

Music

- 148 • Musica Antiqua
- 179 • Studies in Medieval Music

Philosophy

- 157 • Medieval Philosophy

Portuguese

- 105A • Survey of Portuguese Literature
- 125A • Culture and Civilization of Portugal and Brazil

Religious Studies

- 100 • From Augustine to Luther
- 115A • Literature and Religion of the Hebrew Bible
- 115B • The Prophets
- 116A • Christian Beginnings
- 116B • Second Century Christianity
- 131C • Judaism in the Medieval World
- 187 • Ascetic Religion in the West

Spanish

- 110A • Survey of Spanish Literature
- 115A • Masterpieces of Spanish Literature
- 116 • Juan Ruiz: The Book of Good Love
- 119A • Spanish Institutions and Culture
- 121A—B • History of the Spanish Language
- 122A—B • Medieval Spanish Literature
- 123A • Hispanic Balladry
- *183A • Studies in Hispanic Literatures
- *197AA—ZZ • Individual Hispanic Authors

*Course content varies; applies only where appropriate to Medieval Studies.

(Note: The yearly schedule for the above courses varies. See appropriate departmental entries.)

Correspondence information

Medieval Studies Program, South Hall, Room 2714, University of California, Santa Barbara, California 93106. Phone: (805) 961-4018 (messages at 961-3441).

Note: Degree credit for 199 courses is limited to 12 total units; the combined total of tutorial units in the major is limited to 16.

See N-2 for 198/199 independent studies unit limitations.

Middle Eastern Studies

Committee in charge

(See appropriate departmental entries for faculty information.)

⁴Nancy Gallagher, Ph.D., *Assistant Professor History*.
Richard Hecht, *Assistant Professor of Religious Studies*.
Charles Wendell, Ph.D., *Associate Professor of Arabic and Religious Studies*. (*Chairperson of the Committee*)

⁴Absent on Leave 1980-81.

The Middle Eastern Studies major is being discontinued at UCSB effective Fall 1981. Students entering the major during the 1980-81 academic year and those already in the major will be permitted to complete the major as planned.

Concerns of the program

The major in Middle Eastern Studies is an interdepartmental major designed for students who wish to pursue graduate study in this area or professional careers that require residence in, or knowledge of the Middle Eastern countries. It is also intended to serve the needs of those who desire a general education with special emphasis on this important area.

The selection of courses should be made by the student in consultation with the committee in charge on the basis of the needs and objectives of the individual student.

Bachelor of Arts

Preparation for the major

Students majoring in Middle Eastern Studies must take six quarters (24 units) in one of the languages of the area. This

requirement can be satisfied at the present by either Arabic 1, 2, 3, 4, 5, 6 or Hebrew 1, 2, 3, 115A—B—C. Students who have taken intensive language courses elsewhere and can demonstrate an equivalent level of competence, as judged by the committee in charge, may waive this requirement.

In addition, the student is required to take History 46 and Art History 6A or equivalent, as approved by petition.

Upper Division major

Forty units of upper division courses must be selected from the following: Anthropology 128, 140, Art 152A, 165B, Arabic 110, 198, Hebrew 110, 115A—B—C; (not to be counted for students who took this in preparation for the major), 120A—B—C, 199, Semitic Languages 120A—B—C, History 110, 145A—B, 146A—B—Q, 195, Political Science 147, 150, 196, Religious Studies 115A—B, 116A—B, 130, 131A—B—C—D, 134A—B, 140A—B—C, 194.

In selecting the forty units, every major must take (from the preceding list) four units of anthropology, four units of history, four units of Arabic or Hebrew literature, four units of religious studies, and a senior seminar (History 195 or Political Science 196 or Religious Studies 194).

(Note: The yearly schedule for the above courses varies. See appropriate departmental entry.)

Correspondence information

**Chairperson of the Program, Middle Eastern Studies,
University of California, Santa Barbara, California
93106. (805) 961-3095.**

Military Science (ROTC)

Professor

Thomas E. Stephens, Lieutenant Colonel, Infantry, M.A.,
*Tulane University; Political Science (Chairperson of
the Department.)*

Assistant Professors

John K. Muzzy, Major, Armor, M.A.; *Webster State
University.*

Steven E. Daigle, Captain, Field Artillery; M.S., *Boston
University*

Jack E. Lundy, Captain, Adjutant General, M.A., *UC
Santa Barbara; history.*

Departmental Advising:

All department instructors will counsel students on the offered academic courses, the ROTC program, and financial aid. In addition, the department's ROTC Information Counselor is available for discussion on special options, such as the Two-Year Program or Scholarships. Pertinent written information including numerous nationally produced publications, a local departmental brochure, and fact sheets are available. The most current literature may be obtained from the Department, Campus Information Center, or other counseling services on campus.

Concerns of the Department

The department offers a general Military Science curriculum designed to conform to the academic pattern of the Santa Barbara campus. Military Science classes are open to all students.

The Military Science curriculum is a part of the Army Reserve Officers Training Corps (ROTC) program which leads to a commission as a second lieutenant in the Army Reserves, National Guard or Active Army. Enrollment in the ROTC program is on a voluntary basis and is limited to qualified men and women students.

The Army ROTC program is divided into two parts: (1) two years of lower division subjects, or Basic Course, to prepare the student for advanced instruction and (2) two years of upper division work, or Advanced Course, for selected students.

Freshmen, sophomores, transfer students and others who did not take the Basic Course may receive equivalent ROTC credit for these classes by attending one of several summer sessions at a designated Army installation in the summer. Successful completion of one of these sessions will qualify the student for direct entry into the Advanced Course. Attendees at these summer sessions are given an allowance for travel expenses and are paid for their period of camp attendance. Furthermore, an on-campus two week summer session will also qualify students for the

advanced course.

Admission to the upper division Advanced Course is limited to selected students who meet all academic and physical requirements. Enrollees in this course must execute a contract with the U.S. Army agreeing to complete the course and accept a commission, if one is offered. In return, the students receive a cash payment of \$100 per month for each school month they are enrolled in the program. Additionally, they may also join the National Guard or Reserves and make \$80 or more a month by attending one weekend meeting a month.

Upon completion of the Advanced Course, the student is commissioned as a second lieutenant in one of the specialties of the U.S. Army. Insofar as possible, the student's desires and academic major will be considered by the Army when making initial assignments. If the student is commissioned before he graduates he may join the Reserves or National Guard as a 2nd LT and attend one weekend drill a month while finishing school. After graduation the student may elect to stay in the Reserves or National Guard or request to go on active duty.

Students selected for the advanced ROTC will attend a six-week advanced camp between their first and second year of ROTC. Attendees at this camp are given an allowance for travel expenses and are paid for their period of camp attendance.

Scholarship Program. Army ROTC Scholarships are available for various terms to selected applicants. These scholarships pay all costs for tuition, books, and other student fees, and \$100 per month cash to the student. Full four-year scholarships are offered to high school seniors selected by nationwide competition. A limited number of three-, two- and one-year scholarships are available to outstanding students enrolled at the University level. Full details are available at the Military Science Department.

ROTC students desiring to obtain advanced degrees may be granted delays in reporting for active duty. For ROTC graduates, the period of active duty is normally three years, or only three months with a longer reserve commitment. Students accepting ROTC scholarships will be required to serve longer terms of active duty.

Career Opportunities

For the student who does *not* wish to make the military a career or at most, views military service as in interim job or a prelude to a civilian occupation, Military Science courses and the ROTC program can still provide essential career preparation. The department curriculum gives the student both theoretical and practical leadership and management expertise which has direct applicability to any business environment. Moreover, students individually develop maturity, dependability, discipline and other personal attributes needed in all career fields.

Military Science

Leadership Laboratory required for all Advanced ROTC students to provide the opportunities for leadership development through practical exercises emphasizing the duties and responsibilities of junior leaders. Basic students who enroll in ROTC courses are not required to attend leadership laboratory for course credit.

Lower Division courses

1A • U.S. Defense Establishment (1)

The study of the development of the U.S. Defense Establishment from the American Revolutionary War through World War II, to include its origins and constitutional basis, its evolution and emergence as a professional military force. Within this evolutionary context, the course emphasis is on contemporary issues relating to the military force structure and its utilization. (F)

1B • U.S. Defense Establishment (1)

The study of the development, organization and functions of the Department of Defense. Includes studies of the roles, missions and organization of the various armed services and of collective defense agreements. (W)

1C • U.S. Defense Establishment (1)

The study of the varied missions of the U.S. Army, to include military assistance and civic action programs, public works tasks, development of reserve forces and training for unconventional warfare. (S)

3 • Statecraft and Military Affairs (2)

Sweigart
Examination of strategy, policy, military affairs and statecraft; U.S. involvement in the World Wars, Korea and Vietnam; causes of and changing attitudes toward war; U.S. vital interests; the utility of nuclear weapons and strategic thinking in the modern world. (F)

4 • Politics, Peace and War (2)

Sweigart
An examination of the role of force in the international system; national security; nuclear weapons; limited conventional and unconventional warfare; the control and elimination of force in international politics; and the place of the United States in the world today. (W)

5 • Contemporary World Politics and Military Affairs (2)

Sweigart
An examination of emerging patterns in contemporary world politics, trade and investment, development assistance, and international institutions that influence the diplomacy of military affairs to include the disintegration of cold war

coalitions and recent challenges to the nation-state system. (S)

6 • Basic Military Science Field Study (2)

Staff
Practicum in a field study environment. Student is given classroom instruction on leadership techniques, military courtesy, discipline, customs, traditions of the service and career opportunities. Additionally, the students receive lab work in military skills such as map reading, rifle marksmanship, tactics, first aid, drill and ceremony and physical training.

7 • American Military History Prior to the Twentieth Century (2)

Lundy
A survey history of the development of the US Military policy from colonial origins through the end of the nineteenth century. Emphasis will be placed on the origins of the American civil-military relationship and on the changing nature of warfare.

8 • American Military History in the First Half of the Twentieth Century (2)

Lundy
A survey of the ascendancy of the US as a military power during the first half of the twentieth century. Emphasis will be placed on national strategy, the evolution of civil-military relationships and the changing nature of warfare.

9 • Contemporary American Military History (2)

Lundy
A survey of history of the Cold War era with emphasis on Korea, Cold War Military Strategy and Vietnam. Revolutionary doctrine and practice will also be examined through analysis of several contemporary conflicts in Asia, Latin America, and the Middle East.

10 • Military History of World War II (2)

Lundy
A survey history of World War II as seen through key documentary films. Emphasis will be placed on the world wide political and military build-up along with analysis of strategies, campaigns, and key battles.

Upper Division courses

131 • Principles of Leadership (2)

The study of the principles of leadership, responsibilities and basic qualities of a leader, leadership traits and special problems of military leadership. The study of theories of management and organizational behavior and of the decision making process. Additionally, familiarization with communication systems and procedures used in the military team. Leadership Laboratory required for all ROTC students.

132 • Advanced Tactical Theory (2)

The advanced study of tactical theory within the framework of the military team. Familiarization with small military unit organizations and operations. Fundamentals of offensive and defensive combat and their applications. Includes one field trip as course requirement. Leadership Laboratory required for all ROTC students.

133 • Military Management (2)

The study of the fundamentals of decision making, command and control problems, staff relationships, evaluation of situations and analysis of courses of action. Leadership Laboratory required for all ROTC students.

141 • Principles of Military Instruction (2)

Introduction of military teaching techniques and principles of planning instruction. Familiarization with methods of instruction and practical application by the student, who is required to prepare several presentations, which include teaching a lesson, and use of closed-circuit television for self-evaluation. Leadership Laboratory required for all ROTC students.

142 • Fundamentals of Military Law (2)

The study of military law and the fundamental concepts of military judicial procedures contained in the Uniform Code of Military Justice; rules of evidence, pre-trial and appellant procedures. Leadership Laboratory required for all ROTC students.

143 • World Change and Military Implications (2)

Analysis of the role of the United States in the contemporary world arena, with emphasis on the leadership and management problems of the U.S. Army in support of this role. A portion of the quarter will be a treatment of the U.S. Army's mission in stability operations for developing and transitional societies. Leadership Laboratory required for all ROTC students.

190 • Advanced Military Science Field Study (4)

Stephens
Practicum in a field study environment. Each student is placed in problem solving and decision making situations and required to respond with actions based upon knowledge gained in the prerequisite courses. This course is for ROTC cadets only. (Sum/F)

199 • Independent Studies (1-5)

Staff
Prerequisites: Open only to advanced students approved by the department chairman.
Study of a subject not covered in course offerings.

Music

Professors

- Emma Lou Diemer, Ph.D., *Eastman School of Music; theory and composition.*
- Peter Racine Fricker, Hon. D.Mus., F.R.C.O., A.R.C.M., Hon. R.A.M., *Royal College of Music, London; theory and composition.*
- ² ³John Gillespie, Ph.D., *University of Southern California; harpsichord, baroque music, music appreciation.*
- Dolores M. Hsu, Ph.D., *University of Southern California; nineteenth century music, music criticism, ethnomusicology. (Chairperson)*
- Wendell Nelson, D.M.A., *Northwestern University; piano.*
- Alejandro Planchart, Ph.D., *Harvard University; medieval and renaissance music, Collegium Musicum.*
- ² ³Clayton Wilson, M.M., *Northwestern University; oboe, woodwind class, woodwind ensemble, theory.*
- Carl Zytowski, M.A., *University of Washington; voice, opera, chorus, choral conducting.*

Associate Professors

- ³Edward Applebaum, Ph.D., *UC Los Angeles; theory and composition.*
- ¹Michael Ingham, M.A., *Denver University; voice, chorus.*
- Betty Oberacker, D.M.A., *Ohio State University; piano, chamber music.*
- Heichiro Ohyama, *Diploma, Guildhall School of Music, London: Visiting Assoc Prof., UC Santa Cruz; viola.*
- Geoffrey B. Rutkowski, M.M., *University of Southern California; cello, chamber music.*

Assistant Professors

- ¹Ronald A. Copes, M.M., *University of Michigan; violin, chamber music.*
- Robert N. Freeman, Ph.D., *UC Los Angeles; classical music.*
- Lester P. Monts, M.M., *University of Nebraska; ethnomusicology and orchestral music. (Acting)*
- William Prizer, Ph.D., *University of North Carolina, renaissance and early baroque music, Collegium Musicum.*
- Joan Smith, Ph.D., *Princeton University; theory, 20th century music.*

Visiting Senior Lecturers in Music

- Frank Collura, M.M., *Manhattan School of Music, N.Y.; conducting.*
- James J. Pellerite, *University of Indiana; woodwinds.*

Visiting Lecturers in Music

- Margery Anwyl, M.M., *University of Southern California; voice.*
- James Atkinson, B.A., *University of Utah; french horn.*

- John Hornschuch, M.M., *University of Southern California; double bass.*
- James Kanter, B.A., *San Fernando Valley State College; clarinet.*
- Patricia Kindel, M.M., *University of Southern California; bassoon.*
- Glenn Lutz, B.M., *California State University, Northridge; trumpet.*
- Peter Madlem, M.A., *UC Santa Barbara; guitar.*
- Ronald Miller, M.A., *UC Santa Barbara; bands.*
- Lou Anne Neill, M.A., *UC Los Angeles; harp.*
- Thomas Raney, B.M., *University of Southern California; percussion.*
- Kathleen Robinson, B.M., *University of Southern California; oboe.*
- Janice Trilck, M.A., *UC Santa Barbara; piano.*
- James Welch, D.M.A., *Stanford University; organ/carillon.*
- Russ Widener, M.M., *Catholic University, trombone.*
- Peter Yazbeck, Artist Diploma, *University of Toronto; piano.*

Professors Emeriti

- Roger E. Chapman, Ph.D., *UC Los Angeles.*
- Van A. Christy, Ph.D., *Columbia University.*
- Maurice Faulkner, Ph.D., *Stanford University.*
- Karl Geiringer, Ph.D., *Universities of Vienna and Berlin.*
- Stefan Krayk, License de Concerts, *Ecole Normale de Musique.*
- Dorothy L. Westra, M.S.M., *Union Theological Seminary.*

¹Absent on Leave, Fall 1980

²Absent on Leave, Winter 1981

³Absent on Leave, Spring 1981

Concerns of the Department

The Department of Music curriculum includes undergraduate courses which lead to completion of either the Bachelor of Arts degree in Music (with emphasis in composition, history, theory, performance), or the Bachelor of Music degree, a professional degree in performance. The undergraduate major programs are designed to serve as a background for professional careers in music, as preparation for graduate studies, or as an area of concentration for a liberal arts education.

Performance ensembles are available for all qualified students, and a wide range of undergraduate courses is offered for non-majors which will fulfill elective requirements.

The graduate program includes courses leading to the M.A. degree in musicology, composition, theory, or performance, and the Ph.D. degree in musicology, composition or theory.

Departmental Advising

Departmental advising for undergraduates is handled primarily in the Department Office by Patricia M. Hopper. Graduate students are advised by faculty members in their area of emphasis: Peter Racine Fricker, composition; Dolores M. Hsu, musicology; Wendell Nelson, performance; Joan Smith, Theory

Requirements for Entering Music Students

All new music majors, whether freshmen or transfers from other institutions or departments, are required to have a placement interview in theory and placement auditions in class piano and performance. These interviews are given only during Registration Week at the beginning of each quarter, and should be taken prior to enrollment in music major classes.

Bachelor of Arts - Music

Students majoring in music must meet the general education requirements as specified in **M-3**. The Department recommends History 4A—B—C and French, German, or Italian as elective courses. Students must pass the sophomore audition, participate in student recitals, and engage in at least one performance laboratory per quarter with or without credit. Students transferring from other institutions are required to complete at least three quarters within the Department.

Composition emphasis

Preparation for the major: Music 4A—B—C—D—E—F; 5A—B—C—D—E; 7; 8A—B—C—D (optional); 12A—B—C; sophomore composition; 31-32 or 33 (six units or less, determined by entrance audition); sophomore piano proficiency audition.

Upper division major: 36 upper division units: Music 101 or 102 or 103; 106A; two courses selected from 160-189 (8 units); 18 units in composition, theory or history courses selected with the guidance of a faculty adviser; (a minimum of 8 units in composition is recommended); Music 192 (a senior composition, meeting standards approved by the faculty of the Department, required of all composition majors).

History emphasis

Preparation for the major: Music 4A—B—C—D—E—F; 5A—B—C—D—E; 7; 12A—B—C; sophomore paper; 31-32 or 33 (six units or less, determined by entrance audition); sophomore piano proficiency audition.

Upper division major: 36 upper division units: Music 101 or 102 or 103; 106A; two courses selected from 160-189 (8 units); 18 units in theory, history or composition courses selected with the guidance of a faculty adviser; Music 192 (a senior research paper, meeting standards approved by the faculty of the Department, required of all history majors).

Theory emphasis

Preparation for the major: Music 4A—B—C—D—E—F; 5A—B—C—D—E; 7; 12A—B—C; sophomore paper; 31-32 or 33 (six units or less, determined by entrance audition); sophomore piano proficiency audition.

Upper division major: 36 upper division units: Music 101 or 102 or 103; 106A; two courses selected from 160-189 (8 units); 18 units in theory, history or composition courses selected with the guidance of a faculty adviser; Music 192 (a senior research paper, meeting standards approved by the faculty of the Department, required of all theory majors).

Performance emphasis

Preparation for the major: Music 4A—B—C—D—E—F; 5A—B—C—D—E; 7; 12A—B—C; sophomore audition; 31—32 or 33 (six units or less, determined by entrance audition); sophomore piano proficiency audition.

Upper division major: 36 upper division units: Music 101 or 102 or 103; 106A; two courses selected from 160-189 (8 units); 18 units in performance courses selected with the guidance of a faculty adviser; Music 192 (a senior audition meeting standards approved by the faculty of the Department, required of all performance majors).

Bachelor of Music

The Bachelor of Music degree is open by audition to certain specially qualified students in performance. Information concerning admission to this program may be obtained by visiting or writing to the Department of Music. Details concerning the General Education requirements for this degree as well as the major requirements are available at the Department of Music.

Master of Arts

Four Master of Arts degrees are available in music. As described below, three involve a thesis or composition; the fourth is the Master of Arts degree in Musical Performance, which involves a recital and supporting document. See **B-10** for admission to graduate status general requirements.

The Master of Arts degree in Musicology or Composition or Theory

Entrance

Students entering the program leading to the Master of Arts degree in Musicology or Composition or Theory will normally be expected to possess a B.A. degree in Music from UCSB or a degree based on equivalent training. Following guidance examinations taken at entrance, the Department may specify certain prerequisites to remedy any deficiencies in the student's undergraduate background. Generally six quarters will be required to complete the following requirements.

Requirements

A residency of six quarters is normally expected (including thesis or composition). Courses normally will include:

1a • Musicology: Music 200A or B; one course from 201A or B or C; and three seminars, each from a different historical period (261A—269B).

1b • Composition: Music 200A; 208A—B—C—D—E; 269A or B; one course from 261A—268B; and one course from 279, 282—284, 287—288, 291—292.

1c • Theory: Music 200A—B; 250A or B; 269A or B; and one course selected from 261A—268B; and (optional) 208A—B—C—D—E.

2 • Students in musicology or composition or theory will normally take additional units from the following: 250A—B, 279, 282–284, 287–288, 291–292; at least three units in graduate performance; and three units in an area outside music. These units will be selected with the guidance of a faculty adviser.

3 • A satisfactory reading knowledge of French or German or Italian must be demonstrated by examination. In certain cases the Department may accept substitution of another foreign language for one of those listed above.

4a • A thesis.

4b • Composition: A composition of substantial length containing more than one movement; a partial concert of the student's compositions, in which the student participates as performer or conductor.

4c • Theory: A thesis.

The Master of Arts Degree in Musical Performance

Entrance

Students entering the program leading to the Master of Arts degree in Musical Performance will normally be expected to possess a B.A. degree in Music from UCSB with a Performance emphasis or a degree based on equivalent training. An entrance audition demonstrating graduate level ability in performance must meet with the approval of an appropriate faculty committee. Following guidance examinations taken at entrance, the Department may specify certain prerequisites to remedy any deficiencies in the student's undergraduate background. Generally six quarters will be required to complete the following requirements.

Requirements

A residency of six quarters is normally expected. Courses normally will include:

1 • Music 220; 221; 295. Students majoring in conducting will take 230 and 231 instead of 220 and 221.

2 • Music 200A and courses from 279, 282—284, 287—288, 291—292. Further courses are to be selected with the guidance of a faculty adviser.

3 • From one to three quarters of ensemble units will be required.

4 • A satisfactory reading knowledge of at least one foreign language must be demonstrated by examination. The language selected must have the approval of the Department.

5 • A public performance in the form of a graduate recital is required. A record of the graduate recital (which

will normally occur in the final quarter) in the form of a tape of the actual performance will be placed in the departmental archives. A written document is to be completed by the candidate giving the historical background and an analysis of the recital material.

Doctor of Philosophy—Musicology or Composition or Theory

1 • In addition to fulfilling the general requirements for admission to graduate status, the Department requires completion of an M.A. degree in music from UCSB, or a degree based on equivalent training. Following guidance examinations taken at entrance, the Department may specify certain prerequisites to remedy any deficiencies in the student's background. Students who do superior work may bypass the master's degree and proceed directly to the Ph.D.

2 • The student must demonstrate by examination a reading knowledge of French and German and of such other languages as the field of specialization may require. One such examination should normally be passed before the M.A. degree is earned.

3 • Students with an M.A. will normally take two years of graduate course work. Students who have bypassed the M.A., will normally take three years of graduate course work.

a • Musicology: Music 200A—B and 201A—B—C. In addition, it is expected that the student enroll in one of the historical seminars (261A—269B) during each quarter of residency.

b • Composition: Specified courses in the history and theory of music or composition (200A, 208A—E), including seminars in those historical periods that have not previously been taken (261A—269B, 279, 282—284, 287—288, 291—292).

c • Theory: Specified courses in the history of music or composition or theory (200A—B, 208A—B—C—D—E, 250A—B), including seminars in those historical periods that have not previously been taken (261A—269B, 279, 282—284, 287—288, 291—292).

The Ph.D. candidate is also required to take three courses in an approved field outside of music. Those qualified in performance may earn three graduate units by means of a lecture-recital given before the qualifying examinations.

4 • Before being admitted to candidacy, the student must pass a series of written and oral qualifying examinations in music history, theory, bibliography and literature covering the whole range of music history and theory.

5a • Musicology: A dissertation giving evidence of ability to conduct independent research of high quality is required of all candidates. The candidate will defend the dissertation in an oral examination.

5b • Composition: An entire concert of the student's compositions, in which the student participates as performer or conductor; an analytical document, the topic to be chosen in consultation with the adviser; a portfolio of compositions, including at least one of substantial length; are required of all candidates.

5c • Theory: A dissertation demonstrating the ability to perform original research in the history of music theory

and/or analytical techniques is required of all candidates. The candidate will defend the dissertation at an oral examination.

Career opportunities

Degree programs in music at UCSB are designed primarily to provide preparation leading to careers in performance, teaching, composition, music history, and theory. There are, however, opportunities for other careers in music such as arts management, music publishing, librarianship, television, radio, recording, films, and stage (including choreography).

Teaching credentials

A bachelor's degree in Music is an acceptable major for entry into a Single Subject (secondary) or Multiple Subject (elementary) Credential Program. To teach in a Junior College requires a Masters Degree (or better) in the teaching field.

For further information concerning the teaching creden-

tial, students are advised to consult with credential advisors in the Graduate School of Education, UCSB.

	English 106	Ergonomics 109	Mathematics 100 A & B	Pre-Professional Experience
Multiple Subject	X	X	X	X
Single Subject	X	X		

Prizes and awards

Various cash prizes and awards are offered each year to outstanding students enrolled in performance, musicology or composition. Further information concerning these prizes and awards is available from the Department of Music Office. See Section C-11

Correspondence information

Departmental correspondence may be sent to: Department of Music, Music Room 1315, University of California, Santa Barbara, California 93106. Phone: (805) 961-3261.

Music

Lower Division courses

1FS • Freshman Seminar in Music (2) Zytowski

Prerequisite: Permission of instructor.

The course will, by means of performance, discussion, and assigned reading, evaluate the professional standards needed for the composer, performer, scholar, or music teacher.

4A—B—C • Musicianship (variable 4.5 for entire course) Staff

Prerequisite: Entrance Interview.

A practical course in sight singing, aural analysis, and rhythmic studies. Competence exams in each area give .5 unit credit. Class meets additionally as sight-singing chorus. Concurrent enrollment in Music 5A—C.

4D—E—F • Musicianship (1-1-1) Staff

Prerequisite: Music 4A—B—C

Sight singing practicum.

5A—B—C • Music Theory (variable - 9 for entire course) Staff

Prerequisite: Entrance interview.

A self-paced, competence-based introduction to music theory. Topics include: terminology (.5 units), melody (1), modal counterpoint (1.5), triads (1.5), tonal counterpoint (1.5), form (2), and orchestration (1). Unit credit assigned according to number of sections successfully completed. Music 4 taken concurrently.

5D • Music Theory (2) Staff

Prerequisite: Successful completion of 9 units of Music 5A—C.

Twentieth century techniques.

5E • Music Theory (2) Staff

Prerequisite: Music 5D.

Introduction to layer analysis.

7 • Form and Analysis (3) Staff

Prerequisite: Music 5E or permission of instructor. For the major.

Analysis of the structural elements of tonal music and the application of standard formal procedures to the creative process of music composition.

8A—B—C—D • Beginning Composition (1-1-1-1) Staff

Prerequisite: Permission of instructor. Primarily for the major.

Assignments in basics of music writing. For a selected number of students enrolled in Music Theory 5A—E.

11 • Fundamentals of Music (4) Staff

For the nonmajor.

The study of notes, scales, triads, inversions, rhythm, harmony, and musical terminology. Laboratory activities include keyboard orientation, sight-singing and ear-training.

12A—B—C • History of Music (3-3-3) Planchart, Hsu

Prerequisite: Music 5A (Sections: terminology, melody, modal counterpoint). For the major.

A chronological study of music history.

A. From earliest times to 1600.

B. From 1600-1800.

C. From 1800-present.

14 • Music and Popular Culture in 20th Century America (4) Prizer [C]

For the non-major.

A survey of the relationships between music and popular culture in 20th century America. Music to be discussed will include Blues, Jazz, and Rock, as well as Classical music. Emphasis will be on cultural, rather than technical aspects of music.

15 • Music History and Appreciation (4) Staff [C]

For the nonmajor.

A selective survey of music of Western Civilization; evolution of forms, styles, media. Designed to enable the student to listen with understanding.

16 • Masterworks of Music (4) Staff [C]

Prerequisite: Music 15 or permission of instructor. For the nonmajor.

A study of great works of music, the latter being chosen to represent various media, textures and historical styles.

19 • Harp (1-3) Neill

Prerequisite: Music 31A or permission of instructor

May be repeated for credit up to 18 units.

20A—B—C • Elementary Voice (1-1-1) Staff

Prerequisite: Music 11 or permission of instructor. Primarily for the instrumental music major. Audition required.

24 • Carillon (1-3) Welch

Prerequisites: Music 33 or equivalent and permission of instructor.

May be repeated for credit up to 18 units.

25 • Intermediate Voice (1-3) Anwyl, Ingham, Zytowski

For the vocal major. May be repeated for credit up to 18 units.

26 • Intermediate Strings (1-3)

Lec. 1 • Violin: Copes

Lec. 2 • Viola: Ohyama

Lec. 3 • Cello: Rutkowski

Lec. 4 • Double Bass: Hornschuch

Lec. 5 • Guitar: Madlem

May be repeated for credit up to 18 units.

27 • Intermediate Woodwinds (1-3) (Wilson in charge)

Lec. 1 • Oboe: Robinson

Lec. 2 • Flute: Pellerite

Lec. 3 • Clarinet: Kanter

Lec. 4 • Bassoon: Kindel

May be repeated for credit up to 18 units.

28 • Intermediate Brass (1-3)

Lec. 1 • Trumpet: Lutz

Lec. 2 • French Horn: Atkinson

Lec. 3 • Trombone: Widener

May be repeated for credit up to 18 units.

29 • Intermediate Percussion (1-3) Raney
May be repeated for credit up to 18 units.

30 • Organ (1-3) Welch
Prerequisites: Music 31A—B or equivalent and permission of instructor.
May be repeated for credit up to 18 units.

31A—B—C • Class Piano (1-1-1) Trilck
Placement by audition. Primarily for Music majors.

32A—B—C—D—E—F • Class Piano (1-1-1-1-1-1) Trilck
Placement by audition. Primarily for Music majors.

33 • Intermediate Piano (1-3) Nelson, Oberacker, Yazbeck
For piano majors only.
May be repeated for credit up to 18 units.

Performance laboratories

Courses 35 through 49 may be repeated for credit up to six units with the exception of Music 42 and 44. Enrollment by audition or permission of instructor.

35 • Women's Chorus (1) Ingham

35S • Women's Chorus—The Dorians (1) Ingham
Concurrent enrollment in Music 35 required.

36 • Men's Chorus (1) Zytowski

36S • Men's Chorus—Schubertians (1) Zytowski
Concurrent enrollment in Music 36 required.

37 • University Singers (1) Ingham

38 • Opera Workshop (1) Zytowski

40 • Contemporary Music Forum (1) Staff
Primarily for music majors.

41 • Piano Ensemble (1) Staff

42 • Orchestra (2) Collura
May be repeated for credit up to 12 units.

43 • Flute Choir (1) Pellerite

44 • Chamber Music Ensemble (1) Staff
May be repeated for credit up to nine units.

45 • Brass Choir (1) Lutz

46 • Woodwind Ensemble (1) Pellerite

47 • Symphonic Band (1) Miller

47S • Jazz Ensemble (1) Staff

48 • Collegium Musicum: Cappella Cordina (1) Planchart, Prizer

48S • Collegium Musicum: Musica Antiqua (1) Prizer, Planchart

49 • Percussion Ensemble (1) Raney

Upper Division courses

101 • Twentieth Century Techniques (4) Staff

Prerequisite: Music 5E or equivalent.
A study of contemporary techniques through both written work and analysis.

102 • Sixteenth Century Counterpoint (4) Staff

Prerequisite: Music 5E or equivalent.
A study of contrapuntal practices of the 16th century through analysis and compositional exercises.

103 • Canon and Fugue (4) Staff
Prerequisite: Music 5E or equivalent.

106A—B • Orchestration (4-4) Smith, Applebaum.

Prerequisite: Music 5E or equivalent. 106A or its equivalent is prerequisite to 106B.
Tone, range, technical possibilities and transposition of all orchestral and band instruments. Arrangements of standard compositions for strings, brass and woodwinds and the orchestration of original works.

107 • Advanced Orchestration (4) Fricker
Prerequisite: Music 106A—B or equivalent.

A study of advanced orchestration through written work and analysis. Includes both a historical survey of the development of the orchestra from the 17th century to the present and a review of various styles of orchestration in the 20th century.

108A—B • Composition (2-2) Applebaum, Diemer, Fricker

Prerequisite: Music 7 or equivalent and permission of instructor. Primarily for the composition major.

Assignments using small forms and incorporating contemporary techniques.

109A—B—C • Advanced Composition (2-2-2) Applebaum, Diemer, Fricker

Prerequisite: Music 108A-B or equivalent and permission of instructor. For the composition major.

Assignments using larger forms and incorporating contemporary techniques

109L • Introduction to Electronic Music (2) Staff

Prerequisite: 5E, 108, and permission of instructor.

An introduction to the basics of laboratory techniques and to history and development of electronic music.

110A—B—C • Score Reading and Analysis (2-2-2) Collura

Prerequisite: Music 121A—B—C. For conducting majors only.

The study of major representative works in the choral and orchestral repertoire.

110AA—BB—CC • Choral Score Reading and Analysis (2-2-2) Zytowski

Prerequisite: 121AA—BB—CC. For conducting majors only.

A study of major representative works in the choral repertoire.

112L • Music Library Research Techniques (2) Staff

Prerequisites: Music 12A—B—C and permission of instructor.

An introduction to research in the music library for the music major in performance, history, composition, and theory.

115A • Symphonic Music (4) Staff [C]

Prerequisite: Music 15 or equivalent. For the non-major.

An in-depth study of selected symphonic works.

115B • History and Literature of Concerto (4) Nelson [C]

Prerequisite: Music 15 or equivalent. For the non-major.

Designed to acquaint the general listener with concerto form through the study of selected masterworks. Course is analytical, though not highly technical.

116A • History and Literature of Hispanic-American Music (4) Gillespie [C]

Prerequisite: Music 15 or equivalent. For the non-major.

A study of the religious and secular music of Hispanic America, including both folk and art music, and its European sources.

116B • Non-Western Music (4) Gillespie, Monts [C]

Prerequisite: Permission of instructor.

A study of the music of selected peoples of non-Western cultures, including considerations of musical form and structure, performance practice, and the history and social context of the music.

117 • History and Literature of Opera (4) Zytowski [C]

Prerequisite: Music 15 or equivalent. For the non-major.

A systematic historical survey of opera including selected musical illustrations.

118A—Z • History and Literature of Great Composers in Western Music (4) Staff [C]

Prerequisite: Music 15 or equivalent. For the non-major.

A survey of the life and stylistic development of the music of an individual composer selected from the 14th to the 20th century

A. Ludwig van Beethoven

B. J. S. Bach

C. Wolfgang Amadeus Mozart

D. Frederic Chopin

119A • History and Literature of Keyboard Music (4) Staff [C]

Prerequisite: Music 15 or equivalent. For the non-major.

A survey of solo music for harpsichord and piano.

119B • History and Literature of Organ Music (4) Staff [C]

Prerequisite: Music 15 or equivalent. For the non-major.

An historical survey of composers and compositions for the organ with significant works of representative composers from each period studied in detail.

120A—B—C—D—E—F • Conducting (2-2-2-2-2-2) Collura

Prerequisite: Music 106A or permission of instructor. *Must be taken consecutively.*

An introduction to the fundamental techniques of conducting and score reading.

120AA • Choral Conducting (2) Zytowski

Prerequisite: Music 120A—B. *For the conducting major.*

An introduction to the fundamental techniques of choral conducting and score reading.

121A—B—C • Projects in Orchestral Conducting (2-2-2) Collura

Prerequisites: Music 120A—B—C and permission of the instructor. *For the conducting major only.*

The advanced study of specific musical works and their preparation for public performance.

121AA—BB—CC • Projects in Choral Conducting (2-2-2) Zytowski

Prerequisites: Music 120A—B; Music 120AA; permission of instructor. *For conducting majors only.*

The advanced study of specific choral works and their preparation for public performance.

123 • Advanced Harp (1-3) Neill

Prerequisite: Passing of sophomore audition.

May be repeated for credit up to 18 units.

124 • Advanced Carillon (1-3) Welch

Prerequisite: Passing of sophomore audition.

May be repeated for credit up to 18 units.

125 • Advanced Voice (1-3) Ingham, Zytowski

Prerequisite: Passing of sophomore audition.

May be repeated for credit up to 18 units.

126 • Advanced Strings (1-3)

Lec. 1 • Violin: Copes

Lec. 2 • Viola: Ohyama

Lec. 3 • Cello: Rutkowski

Lec. 4 • Double bass: Hornschuch

Lec. 5 • Guitar: Madlem

Prerequisite: Passing of sophomore audition.

May be repeated for credit up to 18 units.

127 • Advanced Woodwinds (1-3) (Wilson in charge)

Lec. 1 • Oboe: Robinson

Lec. 2 • Flute: Pellerite

Lec. 3 • Clarinet: Kanter

Lec. 4 • Bassoon: Kindel

Prerequisite: Passing of sophomore audition.

May be repeated for credit up to 18 units.

128 • Advanced Brass (1-3)

Lec. 1 • Trumpet: Lutz

Lec. 2 • French Horn: J. Atkinson

Lec. 3 • Trombone: Widener

Prerequisite: Passing of sophomore audition.

May be repeated for credit up to 18 units.

129 • Advanced Percussion (1-3) Raney

Prerequisite: Passing of sophomore audition.

May be repeated for credit up to 18 units.

130 • Advanced Organ (1-3) Welch

Prerequisite: Passing of sophomore audition.

May be repeated for credit up to 18 units.

131 • Harpsichord (1-3) Gillespie

Prerequisite: Permission of instructor.

May be repeated for credit up to 18 units.

132A—B—C • Piano Accompanying (2-2-2) Staff

Prerequisite: Permission of instructor.

A course offering keyboard experience in accompanying instrumental and vocal students. Literature from the solo, concerto, and song repertoire is covered.

133 • Advanced Piano (1-3) Nelson, Oberacker, Yazbeck

Prerequisite: Passing of sophomore audition.

May be repeated for credit up to 18 units.

151 • String Repertoire (2) Staff

Prerequisite: Permission of instructor.

A study of selected topics relating to the performance, composition, or history of four-string instruments.

152 • Brass Repertoire (2) Staff

Prerequisite: Permission of instructor.

A study of selected topics relating to the performance, composition, or history of brass instruments.

153 • Woodwind Repertoire (2) Pellerite

Prerequisite: Permission of instructor.

A study of selected topics relating to the performance, composition, or history of woodwind instruments.

154 • Percussion Repertoire (2) Raney

Prerequisite: Permission of instructor.

A study of selected topics relating to the performance, composition, or history percussion instruments.

155 • Writing for the Modern Harp (2) Neill

Prerequisite: Permission of instructor.

Designed to aid composers and arrangers in writing for the harp. It will include a study of compositional techniques, from the conventional to the avant-garde, and a survey of the outstanding harp compositions written in the 20th century.

160A—B • Theory and Analysis (4-4) Staff

Prerequisite: Music 7.

A study of the theoretical aspects of music, including analysis of formal structures and melodic and harmonic development.

160C • Special Topics in Music Theory (4) Staff

Prerequisite: Music 7.

Advanced study in various aspects of music theory including the theory of performance.

161A—Z • Great Composers in Western Music (4) Staff

Prerequisite: Music 12A—B—C or permission of instructor.

Course has as its focus the life and works of an individual composer selected from the period of Machaut to the present.

A. Ludwig van Beethoven

B. J.S. Bach

C. Wolfgang Amadeus Mozart

D. Frederic Chopin

162A • Orchestral Music (4) Staff

Prerequisite: Music 12A—B—C or permission of instructor.

An intensive study of the development of the orchestra and orchestral music since 1730.

162B, • Choral Literature (4) Zytowski

Prerequisite: Music 12A—B—C or permission of instructor.

An historical and analytical survey of major choral works from the sixteenth century to the present.

163A • Keyboard Music (4) Gillespie

Prerequisite: Music 12A—B—C or permission of instructor.

A study of the history and literature of the harpsichord and piano.

163B • Organ Music (4) Welch

Prerequisite: Music 12A—B—C or permission of instructor.

An analytical survey of composers and composition for organ with significant works of representative composers from each period studied in detail.

164 • Chamber Music (4) Staff

Prerequisite: Music 12A—B—C or permission of instructor.

An analytical study of the development of chamber music from its early beginnings to the present with special emphasis in the changes in style.

165 • Art Song (4) Staff

Prerequisite: Music 12A—B—C or permission of instructor.

The development of the art song with emphasis on the poetry and musical styles which evolved in each historical period.

166 • The Concerto (4) Nelson

Prerequisite: Music 12A—B—C or permission of instructor.

A course designed to acquaint the student with the concerto form through the analysis of selected masterworks from the Baroque, Classic, Romantic and Contemporary periods.

167 • National Elements in Music (4) Staff

Prerequisite: Music 12A—B—C or permission of instructor.

In-depth discussion and analysis of music concentrating on the 19th and 20th centuries of a particular country.

173A—B • History and Literature of Church Music (4-4) Gillespie

Prerequisite: Music 12A—B—C or permission of instructor.

A survey of sacred music from its beginnings to the present; includes the pre-Christian heritage and the development of Christian music in both liturgical and non-liturgical aspects.

174 • Non-Western Music (4) Gillespie, Monts

Prerequisite: Permission of instructor.

A study of the music of selected peoples of non-Western cultures, including considerations of musical form and structure, performance prac-

tice, and the history and social context of the music. For the major.

176A • Instruments in the History of Renaissance and Baroque Music (4) Geiringer
Prerequisites: Music 12A—B—C.

Investigation of the history and construction of the numerous musical instruments in use during the Renaissance and Baroque periods. Interrelationship between the instruments and the music of the time will be examined.

176B • Instruments in the History of Classical and Romantic Music (4) Geiringer
Prerequisites: Music 12A—B—C.

Investigation of history and construction of the numerous instruments in use during the Classical and Romantic periods, and their interrelationship with the music of the time.

177 • Opera and Music Drama (4) Zytowski
Prerequisite: Music 7 and 12A—B—C or permission of instructor.

A study of the history and literature of opera and music drama from its origins to the present day.

179 • Studies in Medieval Music (4) Planchart
Prerequisite: Music 12A—B—C or permission of instructor. Primarily for the major emphasizing history and theory.

Introduction to the liturgy and music of the Middle Ages.

180 • Studies in Renaissance Music (4) Prizer
Prerequisite: Music 12A—B—C or permission of instructor.

Primarily for the major emphasizing history and theory. Cantus firmus settings of the fifteenth century. Chanson and motet. The parody mass of the sixteenth century.

181 • Studies in Baroque Music (4) Gillespie
Prerequisite: Music 7 and 12A—B—C or permission of instructor.

A selective study of various stylistic and historical aspects of Baroque music.

182 • Studies in Classic Music (4) Staff
Prerequisite: Music 7 and 12A—B—C or permission of instructor.

A study of the Classical style from its source in the early 18th century to its culmination in the works of Haydn, Mozart, and Beethoven.

183 • Studies in Romantic Music (4) Hsu
Prerequisite: Music 7 and 12A—B—C or permission of instructor.

The development of Romanticism from 18th century sources through the works of Strauss and Mahler.

184 • Studies in Contemporary Music (4) Fricker
Prerequisite: Music 7 and 12A—B—C or permission of instructor.

A course which traces the stylistic development of music since 1910 and discusses various trends in compositional techniques.

185 • Music Criticism (4) Hsu
Prerequisite: Music 7 and 12A—B—C or permission of instructor.

A study of important writings in music criticism

and related fields. Includes analysis of trends in criticism and aesthetics, as well as critical appraisal of selected compositions

187 • Strauss and Hofmannsthal (4) Hsu and Exner

For majors, either in the Department of Music or Department of Germanic & Slavic Languages. An interdisciplinary course on the collaboration between composer and poet. A study of the correspondence and the operas with special emphasis on *Elektra*, *Der Rosenkavalier* and *Ariadne*. This is a related course to German 187

188 • The French Art Song from Symbolism to Surrealism (4) Hsu and Cushing
Prerequisite: Permission of instructors. Open to Music and French majors

An interdisciplinary study in text-music relationships from Faure to Poulenc; from Baudelaire to Eluard. May be taken for credit only once as either Music 188 or French 188

189 • Poetry & Music of the French Renaissance (4) Prizer and Duval
Prerequisite: Open to French majors and music majors with a reading knowledge of French or permission of instructor.

An interdisciplinary study in the relationships between text and music in the Renaissance. Texts will include Marot, Ronsard, and Baif; music will include settings by Josquin, Claudin, and Lassus.

192 • Senior Audition (2) Staff
Required for graduation. Senior audition or paper or composition.

194 • Group Studies for Advanced Students (1-4) Staff
Prerequisite: Permission of instructor and Chairman of Department.

196 • Honors Music (4) Staff
Prerequisite: Qualified upper division students by invitation of instructor and consent of department chairman.

An undergraduate seminar for honor students. Carefully selected topics intended to foster excellence in research, theory, composition, or performance.

197 • Senior Recital (2) Staff
Prerequisite: Music 192
Required for Bachelor of Music students.

***199 • Independent Studies in Music** (1-5) Staff

*See N2 for 199 independent studies unit limitations.

Performance laboratories

Courses 135 to 149 may be repeated for credit up to nine units with the exception of Music 142 and 144. Admission by audition or permission of instructor

135 • Women's Chorus (1) Ingham

135S • Women's Chorus—The Dorians (1) Ingham
Concurrent enrollment in Music 135 required

136 • Men's Chorus (1) Zytowski

136S • Men's Chorus—Schubertians (1) Zytowski
Concurrent enrollment in Music 136 required.

137 • University Singers (1) Ingham

138 • Opera Workshop (1) Zytowski

140 • Contemporary Music Forum (1) Staff
Primarily for music majors.

141 • Piano Ensemble (1) Staff

142 • Orchestra (2) Collura
May be repeated up to 18 units.

143 • Flute Choir (1) Pellerite

144 • Chamber Music Ensemble (1-2) Staff
May be repeated up to 18 units.

145 • Brass Choir (1) Lutz

146 • Woodwind Ensemble (1) Pellerite
May be repeated up to 18 units.

147 • Symphonic Band (1) Miller

147S • Jazz Ensemble (1) Staff

148 • Collegium Musicum: Capella Cordina (1) Planchart, Prizer

148S • Collegium Musicum: Musica Antiqua (1) Prizer, Planchart

149 • Percussion Ensemble (1) Raney

Graduate courses

200A—B • Bibliography and Research Techniques (4-4) Staff

A. A survey of music bibliography and research methods for the graduate student.

B. Individual research projects and discussions designed to give the graduate student understanding of the different approaches to historical and systematic musicology. Primarily intended for the M.A. and Ph.D. in Musicology or Theory.

201A—B—C • Notation and Music: Their Historical Interrelation (4-4-4) Planchart, Prizer

A. Plainchant-early polyphony-modal notation.
B. Black mensural notation from Franco of Cologne to the Ars subtilior.

C. White mensural notation, lute and keyboard tablatures.

207 • Seminar in Orchestration (4) Staff

208A—B—C—D—E • Graduate Composition (4-4-4-4-4) Staff
Individual instruction in composition.

250A—B • Seminar in Music Theory (4-4) Smith

Topics in theoretical research and the history of music theory. Content will vary depending on instructor.

- A. Selected topic in music theory.
- B. History of music theory.

Note: The following seminars (261A—B through 269A—B) are two-quarter seminars.

261A—B • Seminar in Music of the Middle Ages (8-8) Planchart

- A. Origins, evolution and structure of Christian liturgy and chant.
- B. European polyphony.

263A—B • Seminar in Music of the Renaissance (8-8) Planchart, Prizer

- A. Sacred music 1350-1600.
- B. Secular music 1400-1600.

265A—B • Seminar in Music of the Baroque Period (8-8) Gillespie, Prizer

- A. Early Baroque.
- B. Late Baroque

266A—B • Seminar in Music of the Classical Period (8-8) Freeman, Geiringer

- Study of classical style through:
 - A. Selective forms.
 - B. Schools and composers.

268A—B • Seminar in Music of the Romantic Period (8-8) Hsu

- A. Study of the origins of Romantic music and its development to 1850.
- B. Study of late Romanticism with special emphasis on music at the turn of the century.

269A—B • Seminar in Music of the Twentieth Century (8-8) Applebaum, Diemer, Fricker, Smith

- A. Style and Theory.
- B. Special topics.

275 • Seminar in Music Criticism (4) Hsu

Investigation of important critical writings in music from the early 18th century to the present with study of related works in the field of aesthetics. Analysis of the scope and impact of criticism in the musical life of each period.

279 • Studies in Medieval Music (4) Planchart

Introduction to the liturgy and music of the Middle Ages. Primarily for the history and theory emphases.

280 • Ethnomusicology: Theory and Practice (4) Hsu

Study of the evolution of the discipline, its theories and its methods. Major aspects of ethnomusicological research exemplified in the study of music in Chinese history.

281 • Interdisciplinary Studies (4) Staff**282 • Studies in Classical Music** (4) Staff

A study of the Classical style from its source in the early 18th century to its culmination in the works of Haydn, Mozart, and Beethoven.

283 • Studies in Romantic Music (4) Hsu

The development of music since 1910 and discussion of various trends in compositional techniques.

284 • Studies in Contemporary Music (4) Fricker

A course which traces the stylistic development of music since 1910 and discusses trends in compositional techniques.

287 • Strauss and Hofmannsthal (4) Hsu, Exner

An interdisciplinary course in the collaboration between composer and poet. A study of the correspondence and the operas with special emphasis on *Elektra*, *Der Rosenkavalier*, and *Ariadne*.

288 • The French Art Song from Symbolism to Surrealism (4) Hsu, Cushing

Prerequisite: Permission of instructors

An interdisciplinary study in text-music relationships from Faure to Poulenc; from Baudelaire to Eluard

289 • Poetry & Music of the French Renaissance (4) Prizer and Duval

Prerequisite: Music Graduate Students: reading knowledge of French. Others: permission of instructors.

An interdisciplinary study in the relationships between text and music in the Renaissance. Texts will include Marot, Ronsard, and Bait; music will include settings by Josquin, Claudin, and Lassus.

291 • Studies in Renaissance Music (4) Prizer

Cantus Firmus Settings of the fifteenth century. Chanson and motet. The parody mass of the sixteenth century. Primarily for the theory and history emphases.

292 • Studies in Baroque Music (4) Gillespie

A selective study of various stylistic and historical aspects of Baroque music.

295 • Graduate Recital (2-6) Staff

Preparation of public recital required for degree.

300 • Directed Teaching in Music (2-4) Staff

Prerequisite: Appointment as Teaching Assistant
Supervised experience as a Teaching Assistant including preparation time.

590 series courses may be taken for a maximum of 24 units.**594AA—594ZZ • Special Topics** (1-4) Staff

Special seminar in selected problems of current musicology, composition, or performance.

595AA—595ZZ • Group Studies (3) Staff

Critical review of research in selected problems of musicology, composition, or performance.

596AA—596ZZ • Directed Reading and Research (2) Staff

Individual tutorial for research in musicology, composition, or performance; instructor will usually be student's major Professor.

597AA—597ZZ • Individual Study for Ph.D. Examinations (1-4) Staff

Instructor will be student's major Professor or Chairman of his/her Doctoral Committee.

598AA—598ZZ • Preparation for the Master's Degree (1-4) Staff

Instructor will be Chairman of student's Thesis Committee, directing research in musicology, composition, or performance. Maximum of 12 units total.

599AA—599ZZ • Ph.D. Dissertation Preparation (1-4) Staff

Instructor will be Chairman of student's Doctoral Committee. Maximum of 12 units total.

Performance laboratories

Courses 220 to 249 may be repeated for credit of up to twelve units unless otherwise noted. Admission by audition or permission of instructor.

220 • Graduate Performance (3) Staff

May be repeated for credit up to eighteen units.

221 • Graduate Chamber Ensemble (3) Staff

May be repeated for credit up to eighteen units.

230 • Graduate Instrumental Conducting (3) Staff

May be repeated for credit up to eighteen units.

231 • Graduate Vocal Conducting (3) Staff

May be repeated up to eighteen units.

235 • Women's Chorus (2) Ingham**235S • Women's Chorus-The Dorians** (2) Ingham

Prerequisite: Concurrent enrollment in Music 235 required.

236 • Men's Chorus (2) Zytowski**236S • Men's Chorus-Schubertians** (2)

Zytowski
Prerequisite: Concurrent enrollment in Music 236 required.

237 • University Singers (2) Ingham**238 • Opera Workshop** (2) Zytowski**240 • Contemporary Music Forum** (3) Staff**241 • Piano Ensemble** (2) Staff**242 • Orchestra** (2) Collura**243 • Flute Choir** (2) Pellerite**244 • Chamber Music Ensemble** (2) Staff**245 • Brass Choir** (2) Lutz**246 • Woodwind Ensemble** (2) Pellerite**247 • Symphonic Band** (2) Miller**247S • Jazz Ensemble** (2) Staff**248 • Collegium Musicum: Cappella Cordina** (2) Planchart, Prizer**248S • Collegium Musicum: Musica Antiqua** (2) Prizer, Planchart**249 • Percussion Ensemble** (2) Raney



Natural Science Program

Professors

(See appropriate departmental entries for faculty information).

Arthur T. Hubbard, *Professor of Chemistry.*

Curtis B. Anderson, Ph.D., *Associate Professor of Chemistry.*

Robert M. Eisberg, *Professor of Physics.*

Alice Alldredge, *Assistant Professor of Biological Sciences, and Staff.*

Concerns of the program

The Natural Science Program is a unified survey of important concepts in the natural sciences and their technological and social implications, sponsored jointly by the Department of Physics, Chemistry and Biological Sciences. Students may apply this sequence (or any portion of it) to Area B-1 in the General Education Program. (See **N**) However, the courses should be taken in order (i.e., A before B and B before C)

Lower Division courses

The courses are not open to students who have completed a college level course in the biological or physical sciences. Exceptions can be made with consent of the instructor and approval of the dean.

1A • Contemporary Natural Science—Physics (4) Staff [B1]

Not open for degree credit for students who have completed Physics 10. Lecture, four hours.

A modern description of matter from the scale of the universe to the scale of subatomic particles. The focus is on the concepts and ideas which man has devised to describe the order, simplicity and beauty of nature at its most fundamental level and which form the basis of current

scientific and technological disciplines. The course is basically descriptive involving little use of mathematics but some familiarity with high school algebra is useful. (F)

1B • Contemporary Natural Science—Chemistry (4) Staff [B1]

Prerequisite: NS 1A or Physics 10, or consent of instructor. Not open for degree credit to students who have completed Chemistry 25. Lecture, three hours; laboratory, two hours.

Introductory survey of basic chemical principles in the context of selected technological and environmental problems. Topics have included: atomic theory, states of matter, the mole in weight relations and solutions, electronic structure of the atom, bonding in molecules, periodicity,

the atmosphere and atmospheric pollution, rates of reaction and equilibrium, ionic equilibrium and pH, thermodynamics, energy production and classes of organic compounds. Laboratory experiments demonstrate how analytical measurements can be made and various chemical phenomena. (W)

1C • Contemporary Natural Science—Biology (4) Alldredge and Staff [B1]

Prerequisites: NS 1A-B. Not open for credit toward graduation to students who have completed Biology 20, Biology 22 or Botany 20. Lecture, four hours.

Selected aspects of modern biology. Topics generally include cell structure, cellular chemistry, nutrition, population growth, birth control, basic genetics, evolution and ecology. (S)

Philosophy

Professors

¹Herbert Fingarette, Ph.D., *UC Los Angeles; philosophy of psychology, philosophy of law, Chinese philosophy.*

³Noel Fleming, D.Phil., *Oxon; philosophy of mind, history of philosophy, aesthetics.*

Hubert R. G. Schwyzer, Ph.D., *UC Berkeley; philosophy of language, metaphysics, Kant, contemporary philosophy.*

², ³Alexander Sesonske, Ph.D., *UC Los Angeles; aesthetics (film), ethics, classical philosophy, philosophy of language.*

Charlotte Stough, Ph.D., *UC Berkeley; Classical philosophy, history of philosophy.*

Burleigh T. Wilkins, Ph.D., *Princeton University; philosophy of History, political and legal philosophy.*

Associate Professors

Francis W. Dauer, Ph.D., *Harvard University; theory of knowledge, Hume, Wittgenstein, logic. (Chairperson)*

J. William Forgie, Ph.D., *Cornell University; Philosophy of religion, Philosophy of language.*

Assistant Professors

Peter W. Hylton, Ph.D., *Harvard University; Contemporary philosophy, philosophy of language.*

William C. Smith, Ph.D., *Princeton University; philosophy of language, metaphysics, epistemology, logic.*

Acting Assistant Professor

Christine Korsgaard, B.A., *University of Illinois*

Visiting Lecturer

Timothy Gould, Ph.D., *Harvard University*

¹Absent on leave Fall, 1980

²Absent on leave Winter, 1981

³Absent on leave Spring, 1981

Concerns of the department

The major in philosophy is designed not only for students who intend to pursue the subject further in graduate study, but also for those intending to go on to graduate work in another field, for example, law, and for those seeking a liberal education leading to the Bachelor of Arts degree.

Departmental Advising and Publications

One of the faculty acts as Undergraduate Adviser whose name and office hours will be available at the department office. Questions on academic matters, waivers and exceptions should be addressed to the adviser. Questions on procedural matters can usually be answered at the depart-

ment office. Available at the department office at any time upon request is an *Information Sheet for Undergraduate Philosophy Majors*. A list of courses to be offered each quarter, with specific descriptions and required texts is available at the department office at the time pre-enrollment counselling begins.

Bachelor of Arts

Preparation for the major:

There are no formal requirements; lower division students are, however, advised to take the sequence Philosophy 20ABC (History of Philosophy) in preparing for the major.

Upper Division Major

Required: 48 units in philosophy of which at least 36 must be in upper division courses, including:

1. Philosophy 3 or 183

2. Two courses from:

Philosophy 100A (Ethics),

Philosophy 100B (Theory of Knowledge),

Philosophy 100C (Philosophy of Language),

Philosophy 100D (Philosophy of Mind),

Philosophy 100E (Metaphysics).

3. One course from:

Philosophy 150A (Contemporary Ethical Theory),

Philosophy 150B (Advanced Topics in Theory of Knowledge),

Philosophy 150C (Advanced Topics in Philosophy of Language),

Philosophy 150D (Advanced Topics in Philosophy of Mind),

Philosophy 150E (Advanced Topics in Metaphysics).

4. Four courses from the following, of which at least one course must be from Group A and one course from Group B:

Group A: Philosophy 151 (Pre-Socratics), 152 (Plato), 153 (Aristotle), 156 (Hellenistic Philosophy).

Group B: Philosophy 160 (Descartes), 161 (Spinoza), 162 (Leibniz), 163 (Locke), 164 (Berkeley), 165 (Hume), 166A (Kant), 166B (Kant).

NOTE: It should not be assumed that every course listed above will be offered each year.

Students preparing for graduate study in philosophy are encouraged to supplement this minimal program with additional courses in individual historical figures and/or courses from Philosophy 150A,B,C,D,E and 184.

Graduate Degrees in Philosophy (M.A., C.Phil., Ph.D.)

Admissions Requirements and Prerequisites

In addition to the UCSB general requirements for admission to graduate status (see the Graduate Division Announcement) and for receipt of the M.A., C.Phil. and Ph.D.

degrees, the specific departmental requirements are set out below. The applicant for admission to the Philosophy Ph.D. program should have completed an undergraduate Philosophy major, or a sufficiently close equivalent, in the judgment of the Graduate Admissions Committee, to make possible the successful pursuit of graduate studies in the Department.

Master of Arts

The graduate program in Philosophy is a Ph.D. program. Only in special circumstances will the Department accept students whose aim is limited to earning the M.A. degree. However, provision is made within the Ph.D. program for awarding the M.A. degree when the student has demonstrated the requisite level of competence (see below).

Candidate in Philosophy

The degree of C.Phil. is received on passing the Oral Qualifying Examination for advancement to Candidacy for the Ph.D.

The Ph.D. Program

1. The Requirement in Logic

Prior to taking the Preliminary Examinations (see 2 below), the student must have successfully completed Philosophy 184. The student may be exempted from this requirement by passing an examination (given only at the time of his or her entrance into the Ph.D. program) designed to demonstrate training in logic equivalent to that provided by Philosophy 183 and 184.

2. The Preliminary Examinations

The set of Preliminary Examinations is given toward the beginning of the Fall term of each year. Re-take exams, if necessary, will be given toward the end of the Spring term. Normally no later than the beginning of the third year (seventh term) in the program each student shall be required to take three Preliminary Examinations. The areas of the Preliminary Examinations shall be:

- A. Epistemology and Metaphysics
- B. History of Philosophy
- C. Ethics, and Value (some area selected by the student from among Aesthetics, Political Philosophy or Philosophy of Law)

The purpose of these examinations is to determine whether the student has acquired sufficient breadth and depth and philosophical maturity to enter into independent philosophical teaching and research. The questions shall be on broad, central philosophical topics in each of the three areas. Candidates failing to pass all three Preliminary Examinations at their first attempt (normally no later than the beginning of their third year in the program - in the Fall) shall be permitted to retake the examinations no later than the end of their third year (in the Spring). (Exceptions to this policy will be made only in unusual circumstances.) Except in the circumstances described below under "The M.A. Degree and its Relation to the Preliminary Examinations," no candidate will be allowed more than one retake of the Preliminary Examinations.

3. The Oral Examination

Upon successful completion of the Preliminary Examinations,

the candidate shall prepare himself for an Oral Examination, success or failure in which will be the final determination of Advancement to Doctoral Candidacy. The examination shall be based on a piece of written work in the area of the candidate's intended dissertation. This piece of written work may be an essay in the relevant area or a chapter of his dissertation. This work may be carried out in consultation with the members of the candidate's committee. Such Oral Examination must be completed by the end of the candidate's third year in the program. Upon passing the Oral Examination the student will be advanced to candidacy for the Ph.D. and awarded the C.Phil. degree.

4. Teaching

The candidate is required to serve in a teaching role, at the level of Teaching Assistant or Associate, during at least three terms of residence.

5. The Dissertation

Satisfactory completion of a dissertation and an oral defense thereof conclude the requirements for the Ph.D.

The M.A. Degree and its Relation to the Preliminary Examinations

1. Candidates passing the Preliminary Examinations shall be entitled to the M.A. degree, but only if they have also completed the course requirements set by the Graduate Division for that degree. (Having completed those course requirements is *not*, however, a condition of being permitted to take the Preliminary Examinations.)

2. Candidates failing the set of Preliminary Examinations, but achieving a specified proportion of "passes" on the separate parts shall also be entitled to the M.A. degree, provided that they have completed the requisite course requirements.

3. Candidates who have met all other requirements for the M.A. may, with permission of the Department, elect to write a thesis and receive the M.A. instead of continuing toward the Ph.D.

4. Students failing the Preliminary Examinations, either once or twice, may earn the M.A. degree by writing an acceptable M.A. thesis.

5. A student who writes an M.A. thesis after having failed the Preliminary Examinations twice may be re-admitted to the doctoral program if i) the student's thesis is judged by his committee to be of such exceptional merit as to warrant a recommendation to the Department that the student be re-admitted and ii) the Department accepts this recommendation. In any such case Preliminary Examinations will have to be passed by the candidate at the first opportunity.

General Information

A full statement of the Department's Ph.D. program with the current details of implementation is available at the Department office. Those desiring further information or a fuller printed prospectus of the program should address inquiry to the Chairperson of the Graduate Committee of the Department.

Requirements for graduate study not leading to a degree

Students are permitted to do advanced studies in philosophy without working for a higher degree. Such students need not have majored in philosophy, although they must have taken a number of courses in philosophy. Only such of the regulations as apply to admission and standards concern these students.

Career opportunities

Offerings in philosophy are not only intended to provide undergraduate preparation for graduate study in philosophy; they are designed to contribute to general education and to preprofessional training in areas (e.g. law) where early specialization is normally discouraged. In numerous instances courses are directly related to specific disciplines or groups of disciplines for which they are intended to supply a philosophical framework (e.g., "Aesthetics"

for the arts, "Philosophy of Science" for the natural sciences, etc.). The staff should be consulted for the courses best adapted to these several purposes. Graduates in Philosophy often pursue careers in the social services.

Teaching credentials

Students who complete a major in philosophy may be eligible to pursue a California teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180 Phelps Hall.

Correspondence information

Department of Philosophy, South Hall 5631, University of California, Santa Barbara, Santa Barbara, California 93106. Phone: (805) 961-3122.

Philosophy

A list of courses to be offered each quarter, with specific descriptions and texts, will be available at the Department of Philosophy office at the time pre-enrollment counseling begins.

Lower Division courses

1 • Short Introduction to Philosophy (4) Staff [D]

Not open for credit to students who have completed Philosophy 5.

Philosophical ideas in terms of which western civilization seeks to understand itself and the world of which it is a part. (F,W,S)

2 • Introduction to Eastern Philosophies (4) Staff [D]

An introduction to three major traditions of Eastern philosophy: non-Buddhist Indian thought, Buddhist philosophy, and Chinese Confucianism and Taoism. The course will concentrate on the philosophical problems which arise within these traditions.

3 • Critical Thinking (4) Staff [D]

Practical reasoning, argumentation, and the analysis of language as instruments of sound thinking in everyday life. (F,W,S)

4 • Introduction to Ethics (4) Sesonkske [D]

An examination, at an introductory level, of such ethical issues as: why be moral, moral relativism, the nature of virtues and vices; and possibly consideration of practical ethical problems such as abortion or war. For non-majors.

5 • Ideas and Practice of Philosophy (4) Staff [D]

Not open for credit to students who have completed Philosophy 1.

An introduction to ways of thinking philosophically and to philosophical ideas. For the student who desires to emphasize reading in original texts and frequent oral and written discussion.

Enrollment limited to 20 Lower Division students only. (F,W,S)

7. Bio-Medical Ethics (4) Staff [D]

An examination of classical and contemporary philosophical thinking about the moral problems raised by the practice of medicine.

8 • Contemporary Issues in Philosophical Perspective (4) Stough, Fingarette [D]

A philosophical examination of moral issues of current interest. Topics to be discussed will be announced in the Departmental course description list (available at Department Office).

10FS • Freshman Seminar (3) Staff

Prerequisite: Freshman standing.

Course content will vary with different instructors. A specific problem in philosophy will be studied and discussed and a term paper will be required. Detailed descriptions will be available at the Department office at the time pre-enrollment counseling begins.

12 • Introduction to the Philosophy of Religion (4) Forgie [D]

An introduction to several traditional philosophical problems connected with religious belief.

20A—B—C • History of Philosophy (4-4-4) Staff [D]

Must be taken in sequence: exceptions allowed only with consent of the instructor.

A • From Thales to Aristotle (F)

B • Medievalists to Rationalists (W)

C • Empiricists and Kant (S)

Upper Division courses

NOTE: With the exception of Philosophy 100A,B,C,D,E, at least one prior course in philosophy, or consent of the instructor is required for any upper division course. See course descriptions for more specific prerequisites.

100A • Ethics (4) Staff [D]

Prerequisite: None

Philosophy 100A—100E are designed primarily for majors in Philosophy. The courses will examine the fundamental concepts, theories and

problems in the five major areas of western philosophy. (These courses do not form a sequence: each may be taken independently of the others.)

100B • Theory of Knowledge (4) Staff [D]

Prerequisite: None

100C • Philosophy of Language (4) Staff [D]

Prerequisite: None

100D • Philosophy of Mind (4) Staff [D]

Prerequisite: None

100E • Metaphysics (4) Staff [D]

Prerequisite: None

101 • The Practice of Analytic Philosophy (4) Staff [D]

Prerequisite: See NOTE under Upper Division courses.

A course devoted to the writing of philosophy, both critical and constructive, within the analytic tradition and on current problems. The nature of analytic philosophizing will be discussed.

108 • Philosophy of the Social Sciences (4) Wilkins [D]

Prerequisite: Philosophy 183 and two Upper Division social science courses recommended.

Logical and methodological problems of the social sciences. Analysis of various claims that the social sciences have a necessarily unique methodological status amongst the sciences.

112 • Philosophy of Religion (4) Forgie [D]

Prerequisite: See NOTE under Upper Division courses.

A study of some of the following topics: religious language, the existence and nature of God, the problem of evil, religious experience, religion and morality, the rationality of religious belief.

115 • Religious Philosophers (4) Fleming [D]

Prerequisite: See NOTE under Upper Division courses.

A study of the work of religious thinkers such as Augustine, Pascal and Kierkegaard. Sometimes only one writer, sometimes several writers, will be read.

118 • Philosophy in the Nineteenth Century (4) Staff [D]

Prerequisite: See NOTE under Upper Division courses.

German idealism, romanticism and the philosophical implications of 19th century scientific developments.

119 • American Philosophy (4) Wilkins [D]

Prerequisites: See NOTE under Upper Division courses.

121 • Political Philosophy (4) Wilkins [D]
Prerequisites: See NOTE under Upper Division courses. Upper Division standing in Political Science, or permission of instructor.

Analysis of fundamental political conceptions; the state, sovereignty, political obligation, natural rights, natural law, etc.

122 • Philosophies of India (4) Staff [D]

Prerequisite: Philosophy 20A or permission of instructor.

123A—B • Classical Chinese Philosophy (4) Fingarette, Wienpahl [D]

Prerequisites: Two courses in philosophy and/or East Asian Studies, or consent of the instructor.

A study of selected classic texts of the period of the "philosophers" (approximately 500 to 200 B.C.). Primary emphasis on the *Analects* and the *Tao Te Ching* (See detailed description of course available at Philosophy Department Office.)

124 • Philosophy of Science (4) Wilkins, Smith [D]

Prerequisites: At least one course in philosophy, or a good background in natural science.

Analysis of the interrelated functions of scientific theories, models, laws, experiments, and observational procedures in relation to the goals of explanation, prediction, control, and understanding. Problems of induction and the logic of confirmation.

127 • Philosophy of History (4) Wilkins [D]

Prerequisites: See NOTE under Upper Division courses.

128 • The Philosophy of Karl Popper (4) Wilkins [D]

Prerequisite: See NOTE under Upper Division courses.

An exploration of Popper's philosophy of natural and social science and his moral and political philosophy.

129 • Philosophical Method and the Linguistic Turn (4) Wilkins [D]

Prerequisite: See NOTE under Upper Division courses.

This course explores (1) how modern philosophy came to be concerned with questions of methodology and (2) the legitimacy of the claim that language analysis is the best (or only) meth-

odology available to the philosopher. Some effort will be made to explore the differences between philosophy, science, and common sense. Readings in Descartes (who originated the modern preoccupation with method), and Hegel (who opposed methodology as a special object of inquiry), but mainly in G. E. Moore, the early positivists, some contemporary ordinary language philosophers, and Richard Rorty's *The Linguistic Turn*.

130 • Freedom and Determinism (4) Wilkins [D]

Prerequisite: None. For non-majors and majors.

This course concerns the problem of whether human action is free or determined and its implications for whether we are morally responsible for our acts. Readings in authors such as St. Augustine, Jonathan Edwards, Kant, William James, Marx, Freud, and Kenny.

132 • Existentialism (4) Fleming [D]

Prerequisite: See NOTE under Upper Division courses.

This course may be repeated up to 8 units, with consent of instructor.

135 • Contemporary Philosophy (4) Staff [D]

Prerequisite: Philosophy 20C or consent of the instructor.

This course may be repeated up to 12 units, with consent of instructor.

136 • Aesthetics (4) Fleming, Sesonke [D]

Prerequisite: See NOTE under Upper Division courses.

Analysis of the aesthetic experience, the aesthetic object, the creative act, and art criticism.

137 • Aesthetic Theory (4) Schwyzer, Sesonke [D]

Prerequisite: See NOTE under Upper Division courses.

A study of some major works in the philosophy of art from Plato to the present, with emphasis on the development and analysis of the basic concepts employed in criticism of the arts.

142 • Advanced Topics in Philosophy of Religion (4) Forgie [D]

Prerequisite: Philosophy 112 or advanced standing in Philosophy.

146 • Philosophy in Literature (4) Staff [D]

Prerequisite: See NOTE under Upper Division courses.

Study of philosophical ideas expressed in literature.

150A • Contemporary Ethical Theory (4) Staff [D]

Prerequisite: Either 1) Philosophy 100A; or 2) two courses from Philosophy 100B,C,D,E, together with consent of the instructor.

This course may be repeated up to 8 units with consent of the instructor.

150B • Advanced Topics in Theory of Knowledge (4) Staff [D]

Prerequisite: Either 1) Philosophy 100B; or 2) two courses from 100A,C,D,E, together with consent of the instructor.

This course may be repeated up to 8 units with consent of the instructor.

150C • Advanced Topics in Philosophy of Language (4) Staff [D]

Prerequisite: Either 1) Philosophy 100C; or 2) two courses from Philosophy 100A,B,D,E, together with consent of the instructor.

This course may be repeated up to 8 units with consent of the instructor.

150D • Advanced Topics in Philosophy of Mind (4) Staff [D]

Prerequisite: Either 1) Philosophy 100D; or 2) two courses from Philosophy 100A,B,C,E, together with consent of the instructor.

This course may be repeated up to 8 units with consent of the instructor.

150E • Advanced Topics in Metaphysics (4) Staff [D]

Prerequisite: Either 1) Philosophy 100E; or 2) two courses from Philosophy 100A,B,C,D, together with consent of the instructor.

This course may be repeated up to 8 units with consent of the instructor.

151 • Pre-Socratics (4) Stough [D]

Prerequisite: Philosophy 20A.

152 • Plato (4) Stough [D]

Prerequisite: Philosophy 20A, or consent of the instructor.

153 • Aristotle (4) Stough [D]

Prerequisite: Philosophy 20A, or consent of the instructor.

156 • Hellenistic Philosophy (4) Stough [D]

Prerequisite: Philosophy 20A.

An examination of the thought of major Greek philosophers of the Hellenistic period.

157 • Medieval Philosophy (4) Staff [D]

Prerequisites: Philosophy 152 and 153, or consent of the instructor.

160 • Descartes (4) Wienpahl [D]

Prerequisite: Philosophy 20A-B, or consent of the instructor.

161 • Spinoza (4) Wienpahl [D]

Prerequisite: Philosophy 20A-B, or consent of the instructor.

162 • Leibniz (4) Staff [D]

Prerequisite: Philosophy 20A-B, or consent of the instructor.

163 • Locke (4) Fleming [D]

Prerequisite: Philosophy 20B-C, or consent of the instructor.

164 • Berkeley (4) Fleming [D]

Prerequisite: Philosophy 20B-C, or consent of the instructor.

165 • Hume (4) Fleming, Dauer [D]

Prerequisite: Philosophy 20B-C, or consent of the instructor.

166A—B • Kant (4-4) Schwyzer [D]

Prerequisite: Two courses from the sequence

from 160 through 165, or consent of the instructor. Must be taken in sequence.

An examination of the philosophy of Kant with special attention to the *Critique of Pure Reason*.

167A—B • Hegel (4-4) Staff [D]

Prerequisite: See NOTE under Upper Division courses.

168 • Nietzsche (4) Fleming [D]

Prerequisite: Philosophy 20B-C, or consent of the instructor.

169 • Phenomenology (4) Staff [D]

Prerequisite: Philosophy 20B-C, or consent of the instructor.

An examination of the philosophies of Husserl and his disciples.

170 • Wittgenstein (4) Schwyzer, Forgie [D]

Prerequisite: Philosophy 20A-B-C, or consent of the instructor.

172 • Heidegger (4) Fleming [D]

Prerequisite: Philosophy 20B-C, or consent of the instructor.

175 • Other Philosophers (4) Staff [D]

Prerequisites: At least one course in Philosophy and permission of the instructor.

Course content will vary. Philosophers not taught in a regular course offering—such philosophers as Plotinus, Bacon, Hobbes, Pascal, Reid, Schopenhauer, Bradley—yet whose work is intrinsically important will be studied. Students may check with the Department Office for more detailed information before enrolling. May be repeated up to twelve units.

180 • Philosophical Psychology (4) Fingarette, Fleming [D]

Prerequisite: Consent of the instructor.

An examination of some of the concepts of the mind, such as those of desire, intention, action, perception, sensation, and the unconscious. May be repeated up to eight units.

182 • Concepts of Psychoanalysis (4) Fingarette [D]

Prerequisite: Consent of the instructor.

Lectures, reading, and case study critiques from Freud and contemporary psychoanalysis; an introduction to the principal conceptions for the student of philosophy and of the arts and humanities in general.

183 • Beginning Modern Logic (4) Dauer [D]

Prerequisite: See NOTE under Upper Division courses. Open to Lower Division students with the consent of the instructor.

An introduction to the concepts and methods of modern symbolic logic. Emphasis is placed on problems of translating English expressions into logical symbols and on the development of skills in using the formal proof procedures of sentential and predicate logic.

184 • Intermediate Modern Logic (4) Dauer [D]

Prerequisite: Philosophy 183 or equivalent, or consent of the instructor.

Further application and development of the predicate calculus, including the calculi of identity and description. An introduction to the me-

talogical questions of completeness, consistency, and decidability.

185 • Advanced Modern Logic (4) Dauer, Smith [D]

Prerequisite: Philosophy 183 and 184 or equivalent, or consent of the instructor.

Topics from the theory of formal systems, set theory, recursive function theory, and automata theory.

187 • Philosophy of Mathematics (4) Staff [D]

Prerequisite: Philosophy 183 or equivalent, or consent of the instructor.

Logistic, formalist, and intuitionist views of the nature of mathematics. Epistemological problems of applied mathematics.

188 • Theory of Value (4) Wilkins [D]

Prerequisite: See NOTE under Upper Division courses.

192 • Philosophy of Law (4) Fingarette [D]

Prerequisite: Philosophy 100A or consent of the instructor.

An introduction to some of the main issues generated by the philosophical question "What is law?" 1. In what sense is conduct made obligatory by the existence of law? 2. What, if any, is the relationship between law and morals? 3. What are rules? What does it mean to say that a rule exists? Do courts really apply rules or merely pretend to do so?

193 • Punishment and Responsibility (4) Fingarette [D]

Prerequisite: At least one course in philosophy or consent of the instructor.

An examination of some of the philosophical problems relevant to the practice of punishment and determinations of responsibility: the rationale of the practice of punishment and the legal doctrine of *mens rea*; the analysis of specific conditions of responsibility ('acts of will', intention, and negligence); the claim that the criminal law could and should dispense with mental conditions of responsibility; the distinctions and relations between the meanings of 'punishment,' 'responsibility,' 'retribution,' 'guilt,' 'shame,' etc.

194 • Group Studies in Philosophy (4) Staff

Prerequisite: Upper Division standing in philosophy and consent of instructor.

Enrollment normally limited to twelve or fewer students. Course may be repeated for credit up to eight units.

195 • Advanced Seminar in Classical Philosophy (4) Stough. *Prerequisite:* At least two Upper Division courses in philosophy. Admission by interview with instructor only.

Intensive reading and discussion of the texts of individual Greek philosophers. Specifics will be available in Departmental Course List.

196 • Senior Honors Seminar (4) Staff

Enrollment limited to senior Philosophy majors, by invitation of instructor.

A discussion course centered around a single topic or problem to be announced in advance by the instructor. (F)

197A—B • Senior Honors Thesis (2-2) Staff

Enrollment limited to senior Philosophy majors;

by consent of instructor.

A research and writing tutorial designed for senior honors majors. The first term will be spent mainly in selecting and researching a topic for the thesis. The second term will be spent mainly in the writing of the thesis. (W,S)

***199 • Independent Studies In Philosophy** (1-5) Staff

Prerequisite: Upper Division standing and instructor approval.

Students who are eligible may take Independent Studies for one-five units per quarter. A written statement of the proposed program of study must be presented to the instructor for his approval before the student signs up for the course. An Independent Studies Course card must be filed with student's packet. (F,W,S)

*See N-2 for 198/199 independent studies unit limitations.

Graduate courses

NOTE: Graduate standing is prerequisite for all graduate courses. All graduate seminars may be repeated with consent of the instructor, and may be taken for one to four units of work as determined by consultation with the instructor. Specific topics for seminars will be listed in the Course Description available at the Department Office at the time pre-enrollment counselling begins.

251 • Seminar in Metaphysics (1-4) Staff

252 • Seminar in Aesthetics (1-4) Staff

253 • Seminar in the Philosophy of Language (1-4) Staff

254 • Seminar in Ethics (1-4) Staff

255 • Seminar in the Philosophy of the Social Sciences (1-4) Staff

256 • Seminar in Epistemology (1-4) Staff

257 • Seminar in the Philosophy of History (1-4) Staff

260 • Problems in Legal and Political Philosophy (1-4) Staff

262 • Seminar in the Philosophy of Mind (1-4) Staff

264 • Seminar in the Philosophy of Science (1-4) Staff

270 • Seminar in the History of Philosophy (1-4) Staff

280 • Seminar—Contemporary Figures in Philosophy (1-4) Staff

284 • Seminar in the Philosophy of Mathematics (1-4) Staff

286 • Seminar in the Philosophy of Logic (1-4) Staff

594 • Special Topics (1-4) Staff
Prerequisite: Consent of the instructor.
Special seminar on research subjects of current interest.

A written proposal must be approved by the instructor and Department Chairman and filed with the Graduate Division.

598 • Master's Thesis Research and Preparation (1-12) Staff

599 • Ph.D. Dissertation Preparation (1-12) Staff

596 • Directed Reading and Research (1-4) Staff
Prerequisite: Consent of the instructor.

597 • Individual Study for Master's and/or Ph.D. Examinations for Advancement to Candidacy (1-12) Staff

Physical Activities

Supervisors

Arthur J. Aldritt, M.A., *University of California, Berkeley.*
Willard M. Hammer, Ed.D., *University of Oregon.*
Zoltan von Somogyi, Master Coach Soccer and Fencing,
Royal Academy of Physical Education, Budapest, Hungary.
F. Patricia Stock, M.S., *University of Oregon.*
(Chairperson)

Associate Supervisor

Newell D. Breyfogle, M.A., *University of Iowa.*

Emeriti

Ernest N. Carter, Ed.D., *University of California, Los Angeles.*
Arthur J. Gallon, Ed.D., *University of California, Berkeley*
Mayville S. Kelliher, Ed.D., *University of Oregon.*
Wilton M. Wilton, Ed.D., *University of California, Los Angeles.*

Concerns of the department

The Department of Physical Activities offers to the general student body courses designed to contribute to the development and maintenance of physical fitness, recreational skills for use in leisure time, and professional courses leading to the Athletic Coaching Program Certificate.
Courses may be taken only once for credit. No more than 6 units of Physical Activities "1—" courses or the equivalent may be counted toward degree requirements. A physical examination performed by your private physican will be reviewed by the Student Health Service.
Fines are imposed for each formal transaction necessi-

tated by failure of the student to comply with the regulations of the department: (a) failure to return equipment, or clothing, on or before the date posted for such return at the end of each quarter; (b) failure to close out lockers at the end of each quarter (\$5.00).

Teaching credentials and departmental advising

The Department of Physical Activities offers a program in Athletic Coaching consisting of 30 units. A bachelor's degree is not available in this subject. This program is primarily designed for those interested in coaching at the secondary or community college level. The basic core requirement consists of 19-21 units. The remaining units are selected from Physical Activities offerings with direction from the Coaching Adviser. Students desiring to enroll in this program must consult with the department counselor prior to enrolling in classes.

Preparation for this program: Recommended are a course in Psychology and in Speech.
Required core courses: PA 130A—C, 149, 150, 170 series (two courses), 180 and/or 392.
Consult with department counselor about elective courses.
Specific details of State of California and University of California requirements for the credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180 Phelps Hall.

Correspondence information

Department of Physical Activities, University of California, Santa Barbara, California 93106. Phone: (8-05) 961-2181.

Physical Activities for men and women Lower Division courses

Fundamental Sports Activities The physical activities listed below are designed to provide a basic program by which students may improve their

physical condition, secure useful neuro-muscular development, and gain recreational skills. The letter A indicates elementary level; B, intermediate level; and C, advanced level. Permission to take the intermediate and advanced courses without having previously completed the elementary course is given by the instructor de-

pending upon ability. Classes meet two periods weekly and provide instruction and supervised practice in the fundamentals of each activity. A course may be taken only once for credit.

NOTE: Courses with a \$ prefix have a special fee charged for use of equipment and facilities not

owned by the university. Direct payment will be made by the student.

1—2A-B-C-D • Intercollegiate Baseball (1/2)

1—3A-B-C • Archery (1/2)

1—4A-B-C • Badminton (1/2)

1—5A-B-C • Baseball (1/2)

1—6A-B-C • Basketball (1/2) (Begins Oct. 15)

1—8A-B-C • Body Toning and Conditioning (1/2)

A course designed to provide students with the opportunity to improve their basic physical condition, secure useful neuromuscular development, and gain recreational skills.

\$1—9A-B-C • Bowling (1/2)

1—10A-B-C • Boxing (1/2)

1—11A-B-C-D • Intercollegiate Basketball (1/2)
Separate sections for men & women.

1—13A-B-C • Saber Fencing (1/2)

1—14A-B-C-D • Intercollegiate Cross Country (1/2)

1—16A-B-C • Folk Dance (1/2)

1—18A-B-C • Foil Fencing (1/2)

1—20 • Field Hockey (1/2)

1—22A-B-C-D • Intercollegiate Golf (1/2)

1—23A-B-C-D • Intercollegiate Gymnastics (1/2)
Separate sections for men and women.

1—24A-B-C • Golf (1/2)

1—25A-B-C • Tumbling and Free Exercise
Affords a basic background for the sport of Gymnastics with a working knowledge of tumbling skills progressing from basic mat somersaults, kips, balances, etc., to intermediate and advanced routines as used in both the men's and women's competitive tumbling and free exercise events.

1—26A-B-C • Gymnastics Apparatus (1/2)
Offers basic, intermediate and advanced instruction for both men and women in all Olympic Events except for Free Exercise. Step by step progressions leading to competitive style routines are taught for each of the three ability levels.

1—28 • Elementary Orienteering (1/2)

1—29A-B-C • Exercise and Figure Control (1/2)

1—30A-B-C • Soccer (1/2)

1—31A-B-C • Softball (1/2)

1—33A—B—C—D • Intercollegiate Swimming (1/2)
Separate sections for men & women.

1—34A-B-C • Swimming (1/2)

1—35A-B-C • Synchronized Swimming (1/2)

1—36 • Jogging Fitness (1/2)
(a) Jogging (majority of work), (b) Stair running, (c) Indoor and outdoor apparatus, (d) Information on various methods of obtaining cardiovascular fitness: long slow distance, interval training, and repetition training.

1—37A-B-C-D • Intercollegiate Tennis (1/2)
Separate sections for men & women.

\$1—38A-B-C • Tennis (1/2)

1—39A-B-C • Track and Field (1/2)

1—40A-B-C • Volleyball (1/2)

1—41A-B-C • Water Polo (1/2)

1—42A-B-C-D • Intercollegiate Track and Field (1/2)
Separate sections for Men & Women

1—43A-B-C-D • Weight Training (1/2)

1—44A-B-C • Wrestling (1/2)

1—45A-B-C-D • Intercollegiate Water Polo (1/2)

1—47A-B-C-D • Intercollegiate Volleyball (1/2)
Separate sections for men & women.

1—48A-B-C-D • Intercollegiate Soccer (1/2)

1—49A-B-C • Springboard Diving (1/2)

1—57 • Touch Rugby (1/2)

1—99 • Lifetime Activities Interest Class (1/2)
Prerequisite: Consent of instructor.

Pre-enrollment not permitted. This class makes it possible for a student to take instruction beyond the elementary, intermediate and advanced levels of any physical activity 1—class. Enrollment not to exceed one section of 1-99 per quarter.

4A—B—C • Life Fitness (1.5) Staff
A course designed toward attaining physical fitness through an understanding and participation in an effective program of physical activities which can be continued throughout life. Stress will be placed on activities that contribute toward total health.

5A • First Aid and Personal Safety (2) Breyfogle

A course designed to provide the knowledge and ability to give immediate and temporary care to victims of an accident, or sudden illness, until the services of a physician can be obtained.

Successful completion of the course may lead to the Standard Red Cross Certificate.

6A—B • Personal Defense (1.5) Stock
A course designed primarily for but not limited to women. Emphasis will be placed on self defense techniques, skills, and "rules of avoidance and safety."

30A-B-C • Appreciation of Sports (2) Staff
Lecture, demonstrations, and selected learning experiences for the general university student leading to an understanding and appreciation of athletics and recreational sports.

32A • Principles of Officiating (2) Hammer
The principles, ethics and standards of officiating Fall team and individual sports.

32B • Principles of Officiating (2) Staff
The principles, ethics and standards of officiating winter team and individual sports.

32C • Principles of Officiating (2) Gregory
A course open to women that leads to securing women's volleyball and basketball certification.

32D • Principles of Officiating (2) Staff
Principles, ethics and standards of officiating Spring team and individual sports.

48 • Lifesaving (1) Renney
One lecture and one pool period per week. May lead to American Red Cross senior lifesaving certificate.

49A • Elementary Water Safety (1) Wilson
Prerequisite: PA 48.

The course provides an opportunity for individuals to analyze and perform all swimming skills related to personal safety, self-rescue techniques, and small craft safety factors. Satisfactory completion of the course is a prerequisite for PA 49B.

49B • Intermediate Water Safety (1) Wilson
Prerequisite: PA 49A.

The course provides an opportunity for individuals to learn the theory and practice application of methods to organize and present aquatic materials. Satisfactory completion of the course may lead to the American Red Cross Water Safety Instructor's Certificate.

Upper Division courses

101 • Methods of Conditioning in Athletics (3) Staff
Coaching Minor candidate recommended. A course designed to present current methods and concepts of athletic training and conditioning. Emphasis is placed on fitness training programs, conditioning and progressive weight training specific to sports. Basic concepts for guiding training, conditioning, diet and nutrition in athletics are examined.

130A • Foundations of Athletics—Problems Related to Athletics (3) Aldritt
Prerequisites: Coaching Minor student with sen-

ior standing and consent of instructor.

An introduction to basic problems concerned with the management, administration and organization of interscholastic athletic programs. Particular emphasis is placed on programs as conducted under the jurisdiction of the California interscholastic Federation. A COACHING MINOR REQUIRED COURSE.

130C • Foundations of Athletics—Problems Related to Sports Psychology (3) Hammer

Prerequisites: Coaching Minor student with senior standing and consent of the instructor.

The application of data from psychological and related fields as it specifically applies to athletics, coaches, and sports activities. Principles and problems of coaching are examined. Human factors of performance, personality, motivation, learning and stress are presented. A COACHING MINOR REQUIRED COURSE.

130D • Foundations of Athletics—Problems related to Sports and Society (3) Staff

Prerequisites: Coaching Minor, and consent of the instructor.

A course designed to explore the problems relative to sport and society as they affect athletic participation and coaching.

136 • Fundamental Physical Activities in Elementary School Programs (3) Staff

An analysis of the physical activities and progression in motor skills and activities for the elementary school program.

149 • Composite Sciences for Athletic Coaching (3) Staff

Prerequisites: Coaching Minor student and consent of instructor

An overview of the essential scientific disciplines, human anatomy, kinesiology, motor learning physiology and mechanical analysis as they apply to athletic coaching. The course is specifically designed for students desiring to coach athletic teams, but who lack a scientific background related to human motion. A COACHING MINOR REQUIRED COURSE.

150 • Medical Aspects of Athletics (3) Staff
Prerequisites: PA 149, consent of instructor

An introduction to the basic concepts and techniques in the prevention, diagnosis, treatment, and rehabilitation of athletic injuries. The practical application for prevention and the therapeutic measures relative to sports activities are examined. A COACHING MINOR REQUIRED COURSE.

163A • Theory of Individual and Team Sports (3) Staff

Prerequisites: Consent of instructor and related PA courses.

Techniques of teaching Physical Education fundamental skills in individual and team sports, with emphasis on theoretical and practical application. Students must pass skills tests in the areas of Field Hockey, Gymnastics and Volleyball for final enrollment

163B • Theory of Individual and Team Sports (3) Staff

Prerequisite: 163A, or consent of instructor.

Students must pass skills tests in the areas of Swimming, Tennis and Track and Field for final enrollment.

All 170 series, **Techniques of team sports:** the technique of teaching individual and team skills of a variety of team sports and advanced analysis of that sport which is essential to a coach of competitive teams at the interscholastic and college level.

Prerequisite: Related Physical Activities course proficiency, or consent of instructor.

170A • Football (3) Hammer

170B • Basketball (3) Delacy and Staff

170C • Baseball (3) Simpson and Staff

170D • Track and Field (3) Adams

170E • Water Polo (3) Snyder

170F • Diving and Swimming (3) Wilson

170G • Soccer (3) von Somogyi

170H • Gymnastics (3) Staff
Separate sections for men and women.

170I • Volleyball (3) Preston and Gregory

170J • Softball (2) Bonace

170K • Wrestling (2) Hammer

170L • Racquets Sports (2) Staff

170M • Golf (2) Breyfogle

180 • Practicum—Physical Activities (3) Stock

Prerequisites: Registered coaching minor candidates only, and consent of the instructor.

Actual experience in the conduct of activity classes, or athletic teams, under the supervision of an experienced instructor, or coach.

***199 • Independent Studies in Athletic Coaching** (1 to 5 units) Stock

Prerequisite: Senior standing and consent of the instructor.

Open only to advanced students approved by the Coaching Minor adviser and faculty members involved. 199 credits are limited to no more than 10 units total.

*See N-2 for 1980/ 199 independent studies unit limitations

Graduate Course

392 • Student Teaching-Coaching (3-9 variable) Stock

A course designed to satisfy the California Teaching Credential. Available only to students accepted in the School of Education.

Physics

Professors

- Guenter Ahlers, Ph.D., *UC Berkeley; statistical mechanics (experimental)*.
- Paul H. Barrett, Ph.D., *UC Berkeley; solid state physics (experimental)*.
- ⁵David O. Caldwell, Ph.D., *UC Los Angeles; high energy physics (experimental)*.
- David S. Cannell, Ph.D., *Massachusetts Institute of Technology; statistical physics (experimental)*.
- Robert M. Eisberg, Ph.D., *UC Berkeley; nuclear physics (experimental)*.
- Jose R. Fulco, Ph.D., *University of Buenos Aires; high energy physics (theoretical) (Chairperson)*.
- Paul K. Hansma, Ph.D., *UC Berkeley; low temperature physics (experimental)*.
- ³James B. Hartle, Ph.D., *California Institute of Technology; general relativity and relativistic astrophysics (theoretical)*.
- Daniel W. Hone, Ph.D., *University of Illinois; solid state physics (theoretical)*.
- Vincent Jaccarino, Ph.D., *Massachusetts Institute of Technology; solid state physics (experimental)*.
- Harold W. Lewis, Ph.D., *UC Berkeley; theoretical physics*.
- Rollin J. Morrison, Ph.D., *University of Illinois; high energy physics (experimental)*.
- Stanton J. Peale, Ph.D., *Cornell University; solar system physics and astrophysics (theoretical)*.
- Raymond F. Sawyer, Ph.D., *Harvard University; high energy physics and astrophysics (theoretical)*.
- ⁵Douglas J. Scalapino, Ph.D., *Stanford University; solid state physics (theoretical)*.
- J. Robert Schrieffer, Ph.D., *U Illinois; solid state physics (theoretical)*.
- ⁵Robert L. Sugar, Ph.D., *Princeton University; high energy physics (theoretical)*.
- ², ³William C. Walker, Ph.D., *University of Southern California; solid state physics (experimental)*.

Associate Professors

- ¹John Cardy, Ph.D., *University of Cambridge; theoretical physics*.
- ², ³Virgil B. Elings, Ph.D., *Massachusetts Institute of Technology; biomedical physics (experimental)*.
- ³Glen E. Schrank, Ph.D., *UC Los Angeles; high energy physics (theoretical)*.

Assistant Professor

- ¹David Nicoli, Ph.D., *Harvard University; applications of light scattering to experimental statistical mechanics and biophysics*.

Visiting Assistant Professor

Jonathan Briggs, MSc, *Harvard; solid physics*

Visiting Lecturer

Steven Brusca, Ph.D., *UCSB; particle physics (theoretical)*.

Professor Emeritus

Leonard H. Hall, Ph.D., *Brown University; solid state physics (theoretical)*.

¹Absent on Leave Fall 1980.

²Absent on Leave Winter 1981.

³Absent on Leave Spring 1981.

⁴Absent on Leave 1980-81.

⁵Absent on Leave in Residence, 1980-81.

Concerns of the department

The Department of Physics offers undergraduate programs leading to either the B.S. or B.A. degree, and graduate programs leading to a Master's in scientific instrumentation or a Ph.D. in physics.

The Bachelor of Science Degree is designed to give the student planning to continue a career in the physical sciences the basic preparation required either to enter a graduate school in physics, another physical science, or engineering, or to work in industry or in a research laboratory. The program is characterized by a number of electives which must be taken according to the particular aims of each student, with the advice of the faculty adviser. For example, a student interested in a career in research on energy sources or energy utilization will normally take, besides the basic required courses, courses in thermodynamics and statistical mechanics, plasma physics, nuclear physics, mathematical physics, and energy sources and utilization. Students interested in going to graduate school in physics, with the idea of an academic career later on, will be well prepared by taking extra quarters of quantum mechanics, statistical mechanics, solid state physics, elementary particle physics, and mathematical physics. Other examples are described fully in the literature that the students will receive from their advisers.

The Bachelor of Arts degree aims at providing the student with a basic knowledge of the physical sciences through practical use of the scientific method in such a way that he or she could apply this knowledge to a career in the natural or behavioral sciences and economics, or a professional school. Most problems in environmental sciences, including energy utilization and distribution, require a thorough understanding of physical principles for their formulation and ultimate solution. The B.A. degree will be an excellent preparation for careers in those fields. It will also be of particular value for a career in medicine or the medical sciences, in biophysics, geophysics, oceanography, astronomy, and applied math and computer science.

The graduate degrees are described in detail in the graduate section of this catalog.

Departmental advising and publications

To ensure that the student is able to plan a program to suit individual needs, the department will assign faculty advisers for lower and upper division classes at the beginning of each academic year. It is the students' responsibility to meet with an adviser to plan a major program. Transfer students should consult the appropriate adviser at the earliest possible time.

Publications:

Physics at UCSB	1980-81
Graduate Study in Physics	1980-81
Master's Degree Program in Scientific Instrumentation	1980-81

Bachelor of Science

Students are required to fulfill the General Education Requirements of the College of Letters and Science for the Bachelor of Science degree as specified in **M**.

Preparation for the major

The following courses should be completed in the first two years for a total of 56 units:

Physics 14	Modern Trends in the Sciences	(3)
Physics 1,2,3,4,5	Basic Physics: Mechanics; Sound, Heat, Fluid Dynamics; Electromagnetism; Electromagnetism, Waves, Optics; Modern Physics	(4,4,3,3,3)
Physics 3L,4L,5L	Experimental Physics	(1,1,1)
Mathematics 3ABC	Calculus for Science and Engineering Students	(4,4,4)
Chemistry 1ABC	General Chemistry	(3,3,3)

Students transferring to Physics from other disciplines may substitute Physics 6A—B—C with labs [Physics for Biological Scientists (3,3,3)] for Physics 1, 2, 3, 3L but only with explicit Department approval.

Suggested course schedule for freshmen:

First Quarter		Second Quarter		Third Quarter	
Physics 14	(3)	Physics 1	(4)	Physics 2	(4)
Math 3A	(4)	Math 3B	(4)	Math 3C	(4)
English 1A	(4)	English 1B	(4)	Chem 1C	(3)
Chem 1A	(3)	Chem 1B	(3)	Elective	(3)
Elective	(3)	Elective	(3)	Elective	(3-4)
17		18		17-18	

Upper Division major

56 upper division units are required for the B.S. degree in Physics, including:

Physics 100A-B	Modern Trends in the Sciences	(3,3)
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Physics 105A-B	Classical Mechanics	(3,3)
Physics 110A-B-C	Electromagnetism	(4,4,4)
Physics 115A-B	Elementary Quantum Mechanics and Applications	(4,4)
Physics 118	Thermodynamics and Kinetic Theory	(3)

Also Required:

6 units of advanced experimental physics from the 128 ABC series and 15 additional units of upper division physics electives of which no more than 3 may be laboratory courses. With the consent of the chairperson, 4 units of upper division mathematics may be substituted toward the elective requirement.

Bachelor of Arts

Students are required to fulfill the General Education Requirements of the College of Letters and Science for the Bachelor of Arts degree as specified in **M**.

Preparation for the major

The following courses should be completed in the first two years for a total of 52 units:

Physics 14	Modern Trends in the Sciences	(3)
Physics 1,2,3,4	Basic Physics: Mechanics; Sound, Heat, Fluid Dynamics; Electromagnetism, Waves, Optics	(4,4,3,3)
Physics 3L,4L	Experimental Physics	(1,1)
Mathematics 3ABC	Analytical Geometry and Calculus	(4,4,4)
Mathematics 5ABC	Calculus for Science and Engineering Students	(4,4,4)
Chemistry 1ABC	General Chemistry	(3,3,3)

Students transferring to Physics from other disciplines may substitute Physics 6A—B—C with labs [Physics for Biological Scientists (3,3,3)] for Physics 1, 2, 3, 3L but only with explicit Department approval.

Suggested course schedule for freshmen:

First Quarter		Second Quarter		Third Quarter	
Physics 14	(3)	Physics 1	(4)	Physics 2	(4)
Math 3A	(4)	Math 3B	(4)	Math 3C	(4)
English 1A	(4)	English 1B	(4)	Chem 1C	(3)
Chem 1A	(3)	Chem 1B	(3)	Elective	(3-4)
Elective	(3-4)	Elective	(3-4)	Elective	(3-4)
17-18		18-19		18-19	

Upper Division major

42 upper division units are required for the B.A. degree including: 30 units of upper division physics courses of which 6 units must be upper division laboratory including at least 3 units from the series Physics 128A—B—C (Advanced Experimental Physics) plus 12 units of math, science or engineering electives approved by a faculty advisor, for a total of 42 units of upper division major courses.

Cooperative program—Physics and Nuclear Engineering

For physics students who are interested in an industrial

career, one option which may be of interest is a five-year program leading to a B.S. degree in Physics and a B.S. degree in Nuclear Engineering. Students may obtain details of the program from the Department of Physics or the Department of Chemical and Nuclear Engineering. Students are advised to apply for simultaneous registration in the Colleges of Letters and Science and Engineering in order to complete the degree programs in both Physics and Engineering.

Career opportunities

Physics is the most basic of the sciences. Its strong emphasis on fundamental concepts and problem solving makes physics one of the most versatile majors available. The physics major provides the foundations for careers in basic and applied physics and in interdisciplinary areas such as Astronomy, Biophysics, Environmental Science, Oceanography, and Scientific Instrumentation. It is also of value for careers in economics and law. It has been shown that the physics major provides an excellent premedical education. Career information can be obtained at the Physics Department office or from the American Institute of Physics, 335 East 45th St., New York, N.Y. 10017.

Prizes and Awards:

The Arnold T. Nordsieck Prize is awarded each year to an outstanding senior that has demonstrated notable promise in research. Every year a DuPont Prize is awarded to the Physics Major recommended for the Outstanding Senior Award. Also a DuPont Prize is awarded yearly to the Outstanding Teaching Assistant.

Teaching credentials

A bachelor's degree in physics is an acceptable major for entry into a Single Subject (secondary) or Multiple Subject (elementary) Credential Program.

Students completing this degree, who plan to teach at the secondary level in California, should apply to the Single Subject Credential Program in the area of Physical Science. The State of California requires that credential candidates demonstrate their subject matter competency in this teaching area. Subject matter competency can be established in one of two ways: either by passing the National Teachers Examination in this teaching area *or* by completing a State approved program. (The approved program consists of selected course work included in the degree program.) Students should consult with department advisors, or advisors in the Graduate School of Education about courses which, when completed, eliminate the need for taking the National Teachers Examination.

Students who wish to pursue a Multiple Subject (elementary) Teaching Credential are advised that the State of California requires that students complete either a Liberal Studies program (see details in section J of the catalogue), or pass the National Teachers Examination (Common Examination). It is quite feasible for students to complete a degree major and to simultaneously fulfill the requirements for the Liberal Studies program.

Admission to credential programs at UCSB also requires certain prerequisites. The following chart identifies these requirements.

	English 106	Ergonomics 109	Mathematics 100 A & B	Pre-Professional Experience
Multiple Subject Program	X	X	X	X
Single Subject Program	X	X		X

Graduate program

Admission requirements and prerequisites

The Department offers Ph.D. and M.A. degrees in physics and an M.S. degree in Scientific Instrumentation. A candidate for admission to the Ph.D. program must present an undergraduate degree in physics, or its equivalent, and scores of the Graduate Record Examinations (Verbal, Quantitative, and Analytical as well as the Advanced Test in Physics). A candidate for admission to the Scientific Instrumentation program must present an undergraduate degree in a natural science, in engineering, or the equivalent. Further information and a booklet describing current research entitled "Graduate Studies in Physics" can be obtained from the department upon request.

Master of Arts

Although the department does not usually accept students into a terminal Master of Arts program, exceptions are occasionally made.

Degree requirements

Completion of the degree requires 45 quarter units of course work, selected with the approval of the departmental Graduate Adviser. A minimum of 32 units must be in graduate courses (200 and 500 series) in physics. The remainder may be selected from upper division or graduate courses in mathematics, chemistry, engineering or physics.

Master of Science—Scientific Instrumentation

Degree requirements

Completion of 45 quarter units of course work, which must include:

Physics 240A—B—C	Instrumentation Seminar	(4,4,4)
Physics 246A—B—C	Laboratory of Instrumentation	(4,4,4)
Physics 247	Research Project in Instrumentation	(1-3)
Physics 248A—B—C	Instrumentation Electronics	(4,4,4)

and 6 units of related directed studies. The remainder may be selected from upper division or graduate courses in any approved department.

There is no language requirement for this degree.

Satisfactory completion of an oral examination covering the student's course work and project.

Doctor of Philosophy

Admission requirements

In addition to fulfilling the general requirements for admission to graduate status (see Section I), a candidate for admission must present an undergraduate degree in physics, or its equivalent. Scores on both the Aptitude and Advanced sections of the Graduate Record Examination scores must be submitted.

Degree requirements

1. The student must demonstrate a satisfactory level of teaching proficiency. Three quarters as a Teaching Assistant are required in partial satisfaction of the degree requirement.

2. During the first two years of graduate work the student will normally prepare for qualifying examinations, both written and oral. Students are expected to complete the first

of these examinations at the beginning of their second year of graduate study. These examinations will cover both basic physics at the graduate level and advanced topics in fields selected by the student.

3. The final period of graduate study is devoted primarily to research and the preparation of a dissertation. The research, which may be either theoretical or experimental, is conducted under the direction of a member of the faculty, normally in an area related to his own field of specialization. Information about specific areas of current activity should be obtained from the department.

4. The student must successfully defend the dissertation.

Correspondence information

Department of Physics, University of California, Barbara, California 93106 Phone: (805) 961-3888.

Astronomy

Lower Division Courses

1 • Basic Astronomy (4) Staff [B1] FWS

A survey of the development of astronomy with an emphasis on understanding the observable properties of the solar system, the sun and other stars, our own and other galaxies, and the entire universe. Topics of current interest will be discussed as time permits.

2 • History of the Universe (4) Brusca [B1] S

Prerequisite: Astronomy 1.

The large scale structure of the universe, its origin, and evolution. The birth of the sun and the planets and their subsequent evolution. The conditions necessary for life elsewhere in the universe and the probabilities of its existence and detection.

Natural Science

Lower Division course

Contemporary Natural Science • (See Natural Science 1A—B—C) (4-4-4) Staff [B1] F

Physics

Lower Division Courses

1 • Basic Physics—Mechanics (4) Staff [B1] F, W

Prerequisite: One quarter calculus, previously or concurrently

Classical mechanics—Kinematics, vectors, motion in one—, two— and three dimensions, Newton's laws, work and energy, conservation laws, momentum, collisions, center of mass motion, and angular momentum.

2 • Basic Physics—Sound, Heat, Fluid Dynamics (4) Staff [B1] F, W, S

Prerequisite: Physics 1 or ME-10 and one quarter of calculus.

Angular momentum conservation, rigid bodies, properties of solids, oscillations, gravity, fluid statics and dynamics, waves, sound, heat and kinetic theory

3 • Basic Physics—Electromagnetism (3) Staff [B1] F, S

Prerequisite: Physics 1 or ME-10 and two quarters of calculus. Concurrent enrollment in 3L.

Electrostatics, magnetostatics, Faraday's law, induction, magnetic properties of matter.

4 • Basic Physics—Electromagnetism, Waves, Optics (3) Staff [B1] F, W

Prerequisite: Physics 3. Concurrent enrollment in 4L.

Harmonic motion, electromagnetic oscillations, AC currents, Maxwell's equations, electromagnetic waves, light, geometrical optics, interference, diffraction and polarization.

5 • Basic Physics—Modern Physics (3) Staff [B1] W, S

Prerequisite: Physics 4. Concurrent enrollment in 5L.

Special relativity, quantum mechanics, atomic, solid state and nuclear physics. PLEASE NOTE: THIS SEQUENCE IS OFFERED CONCURRENTLY WITH PHYSICS 7A—B—C and 7BL—CL FOR ONE YEAR, AFTER WHICH 7ABC WILL BE DISCONTINUED.

3L—4L—5L • Experimental Physics (1-1-1) Staff

Prerequisite: concurrent registration in Physics 3,4,5.

Experiments in mechanics and dynamics of moving bodies. Instruction in the use of modern laboratory instruments and techniques. Experiments using electromagnetic radiation.

6A—B—C • Physics for Biological Scientists (3-3-3) Staff [B1]

Prerequisite: One quarter of calculus (may be taken concurrently).

A • Mechanics FW

B • Heat, thermodynamics, electricity and magnetism WS

C • Electromagnetic waves, optics, modern physics FS

6AL—BL—CL • Experimental Physics for Biological Scientists (1-1-1) Staff

Prerequisite: Concurrent registration in 6A-B-C, or consent of the instructor.

Experiments in: the mechanical, electrical and thermal properties of matter, the behavior of light and quantum phenomena with application to the biological sciences.

10 • Concepts of Physics (4) Staff [B1] WS

Prerequisite: Not open for degree credit to students who have completed Natural Science 1A.

A survey of important concepts in physics for the non-science major. The contents will vary depending on the interests of the students and instructor.

11 • Physics of Sound (4) Staff [B1] FW

Prerequisite: None.

Introduction to the physics of sound; elementary mechanics, harmonic motion, and waves; acoustics of speech and hearing; physics of musical instruments.

14 • Modern Trends in the Sciences (3) Schrieffer [B1] F

Prerequisite: None.

A survey of latest developments and trends in the natural sciences. Intended primarily to give a qualitative understanding of the exciting problems at the frontier of our knowledge in the sciences and its impact in society.

15A—B • Interdisciplinary Course, Physics/Economics—Energy In the Modern World (3) Lewis, Mead [B1] A-W, B-S

An overview of the scientific and economic aspects of the energy problem in the United States. The basic physics of energy - its generation, conversion and distribution - will be interleaved with the basic economics necessary to understand the factors involved in the formulation of public policy. This course will be taught jointly by the faculty of the Departments of Physics and Economics.

Upper Division courses

100A—B • Methods of Theoretical Physics (3,3) [B1] A-F, B-S

Prerequisites: 100A—Math 5C or equivalent; 100B - Physics 100A

Mathematical methods in Physics: theory of functions of complex variables, Fourier series, inte-

gral transforms, partial differential equations of physics, boundary value problems, Legendre and Bessel functions. Introduction to Hilbert spaces.

105A—B • Classical Mechanics (3-3) Morrison [B1] A-W, B-S

Prerequisites: *Physics 5 or Physics 7.*

Dynamics of point particles, conservation laws, motion of rigid bodies, Lagrangian formulation of mechanics, small vibrations and normal modes.

110A—B—C • Electromagnetism (4-4-4) Schrank [B1] A-F, B-W, C-S

Prerequisites: *Physics 7C or Physics 5 and Mathematics 5C.*

Electrostatics, magnetostatics, electric and magnetic properties of materials. Maxwell's equations, electromagnetic waves, radiation from charged particles, special relativity.

115A • Elementary Quantum Mechanics and Applications (4) Eisberg [B1] F

Prerequisites: *Physics 5, Physics 100A or Mathematics 124A (may be taken concurrently) or equivalent.*

Failures of classical physics and quantum mechanical resolutions. Schroedinger's equation, solutions for one-dimensional systems, one-electron atoms, angular momentum.

115B • Elementary Quantum Mechanics and Applications (4) Eisberg [B1] W

Prerequisites: *Physics 115A.*

Spin, emission and absorption of radiation, identical particles, multi-electron atoms, solids, solid state electronic devices, lasers.

115C • Formal Theory of Quantum Mechanics (4) Nicoli [B1] S

Prerequisites: *Physics, 115B, Physics 100B or Mathematics 124B.*

Matrix formulation, perturbation and other approximation methods; scattering.

115AG—BG • Elementary Quantum Mechanics and Applications (4-4) Eisberg F-W

Same description as 115A—B. *Open only by consent of the Physics Graduate Adviser to graduate students who have not taken 115A—B, or the respective part thereof in this institution.*

115CG • Formal Theory of Quantum Mechanics (4) Nicoli S

Same description as 115C. *Open only by consent of the Physics Graduate Adviser to graduate students who have not taken 115C, or the respective part thereof in this institution.*

118 • Thermodynamics (3) Ahlers [B1] S

Prerequisites: *Physics 5, Math 5C (may be taken concurrently)*

Thermodynamics: three laws of thermodynamics, phase diagrams, entropy, equipartition of energy, specific heat, reversible and irreversible processes. Kinetic theory: Maxwell-Boltzmann distribution, pressure, viscosity, thermal conductivity, diffusion.

119 • Statistical Mechanics and Thermodynamics (4) Ahlers [B1] F

Prerequisite: *Physics 7C or Physics 5.*

Kinetic theory of statistical ensembles. Boltz-

mann, Fermi-Dirac and Bose-Einstein distribution laws. Relation of thermodynamic variables and microscopic properties.

123A—B • Solid State Physics (4-4) Jaccarino [B1] A-W, B-S

Prerequisite: *Physics 115A*

Classification of solids; crystal symmetry, thermal electric and magnetic properties; metals, semiconductors and the band theory of electronic states; magnetic resonance; superconductivity; imperfections. Emphasis will be placed on both fundamental and applied aspects.

123AG—BG • Solid State Physics (4-4) Jaccarino W-S

Prerequisite: *Physics 115A or 115AG.*

Same description as 123A-B. *Open only by consent of the Physics Graduate Adviser to graduate students who have not taken 123A-B or the respective part thereof in this institution.*

124 • Nuclear Physics (4) Eisberg [B1] S

Prerequisite: *Physics 115B.*

Properties of stable nuclei. Nuclear models. Nuclear decay and nuclear reactions, including fusion and fission.

124G • Nuclear Physics (4) Eisberg S

Properties of stable nuclei. Nuclear models. Nuclear decay and nuclear reactions, including fusion and fission. *Open only to graduate students with the consent of the graduate adviser.*

125 • Elementary Particle Physics (4) Caldwell [B1] F

Prerequisite: *Physics 115B.*

Phenomenology of the particles of high energy physics and their strong, electromagnetic, and weak interactions. Fundamental symmetries, invariance principles, and the associated quantum numbers.

125G • Elementary Particle Physics (4) Caldwell F

Phenomenology of the particles of high energy physics and their strong, electromagnetic, and weak interactions. Fundamental symmetries, invariance principles, and the associated quantum numbers. *Open only to graduate students with the consent of the graduate adviser.*

126 • Plasma Physics (4) Staff [B1] S

Prerequisite: *Physics 110A-B-C.*

Introduction to the physics of the fully ionized gas. Motion of charged particles in electric and magnetic fields, magnetohydrodynamics, equilibrium plasma configurations and their stability, waves in plasmas. Examples selected from the space and astrophysical sciences and controlled fusion research.

126G • Plasma Physics (4) Staff S

Introduction to the physics of the fully ionized gas. Motion of charged particles in electric and magnetic fields, magnetohydrodynamics, equilibrium plasma configurations and their stability, waves in plasmas. Examples selected from the space and astrophysical sciences and controlled fusion research. *Open only by consent of the Physics Graduate Adviser to graduate students who have not taken 126. Will not be offered in 80-81.*

127A—B • Electronics for Science Majors (3-3) A-Barrett, B-Cannell [B1] A-F, B-W

Prerequisites: *Six units of calculus and six units of physics.*

Circuit theory, semiconductor device characteristics, feedback amplifiers, oscillators, analog computers, operational amplifiers, digital and logic circuits, integrated circuits, fast pulse technique.

128A—B—C • Advanced Experimental Physics (1-6) Hansma F-W-S

Prerequisite: *115B*

Selected experiments in contemporary physics, e.g., holography, laser light scattering, optical pumping, semiconductors, superconductivity, magnetic resonance, Mossbauer effect, beta and gamma ray spectroscopy, nuclear counting techniques. Units are assigned to each experiment on a variable basis. The student selects experiments yielding desired number of units.

131 • Gravitation and Relativity (4) Hartle [B1] F

An introduction to Einstein's general relativity. The spacetime of special relativity, the principle of equivalence, gravity as geometry, the description of spacetime geometry, the spacetime of a relativistic star, solar system tests of general relativity, gravitational collapse, black holes, cosmology. Will not be offered in 80-81.

133 • Astrophysics (4) Peale [B1] W

Topics will vary with the instructor, e.g., stellar structure and evolution, origin of the elements, formation of planets, introductory cosmology, neutron stars or other topics of particular interest to the instructor and students.

133G • Astrophysics (4) Peale W

Topics will vary with the instructor, e.g., stellar structure and evolution, origin of the elements, formation of planets, introductory cosmology, neutron stars or other topics of particular interest to the instructor and students. *Open only by consent of the Physics Graduate Adviser to graduate students who have not taken 133.*

141 • Optics (4) Walker [B1] F

Modern geometrical and physical optics. Polarization, coherence, interference and diffraction phenomena. Fourier transform spectroscopy, intensity correlation interferometry, spatial filtering, and holography. Selected topics on lasers, light scattering and quantum optics as time permits.

142L • Experimental Research in Molecular and Solid State Physics (2) Staff

Prerequisites: *Physics 7C or 8C and consent of instructor.*

Course offers qualified undergraduates opportunity to work in research laboratories assisting faculty and graduate students in experimental research in molecular and solid state physics. Each staff member has own lab course identified by same letter code as the 599 series.

143L • Experimental Research in Nuclear and Elementary Particle Physics (2) Staff

Prerequisites: *Physics 5, 7C or 8C, and consent of the instructor.*

This course offers qualified undergraduates the opportunity to work in research laboratories assisting the faculty and graduate students in experimental research in nuclear and elementary particle physics. May be repeated for credit up to six units. Each staff member has own lab course identified by same letter code as the 599 series.

***198 • Directed Reading** (1-4) Staff FWS

Prerequisite: Consent of the instructor.

Each staff member has his own directed reading course identified by the same number code as the 599 series.

***199 • Independent Studies in Physics** (1-5) Staff FWS

Prerequisite: Consent of the instructor

Directed individual study open to qualified seniors in the Department. 199 courses are limited to no more than five units in one quarter and no more than 12 units total. Each staff member has his own independent studies course identified by the same number code as the 599 series.

Graduate courses

200A—B—C • Mathematical Methods of Physics (4-4-4) Cardy A—F, B—W, C—S

Mathematical techniques useful in physics, including the theory of functions of a complex variable, linear vector spaces, Fourier transforms, tensor analysis, elementary group theory, partial differential equations of physics, boundary value problems and integral equations.

205 • Classical Mechanics (4) Staff F

Derivation of Lagrange, Hamilton, and Hamilton-Jacobi equations. Development of variational principles. Application of these equations to problems involving two bodies, rigid bodies, small oscillations and classical perturbation theory.

206 • Mechanics of Continuous Media (4) Lewis

Prerequisite: Physics 205.

Dynamics of incompressible and compressible fluids. Supersonic and hypersonic flow, shockwaves. Viscosity. Elasticity.

208 • Special Topics in Classical Physics (4) Lewis F

The course will vary from year to year depending on the interest of the instructor and the students. Topics may include: fluid mechanics, electrodynamics, physics of plasmas, planetary physics.

210A—B—C • Electromagnetic Theory (4-4-4) C-Elias, (F) A-Cardy, (W) B-Cardy, (S)

Electrostatics, magnetostatics, boundary value problems, time varying fields, Maxwell's equations, electromagnetic radiation, multipole fields, scattering, relativistic particle dynamics.

215A—B—C—D • Quantum Mechanics (4-4-4-4) A-Hone, D-Lewis (Fall), B-Hone (W), C-Hone (S)

Fundamental principles; Schroedinger equation; angular momentum; perturbation theory; scattering theory; emission and absorption of radiation; applications to atomic, molecular and nuclear systems; Dirac equation.

217A • Advanced Quantum Mechanics (4) Schrieffer W

Prerequisite: Physics 215B.

Introduction to quantum field theory. Second quantization of non-relativistic and relativistic fields. Applications to many body and fundamental particle problems.

217B • Advanced Quantum Mechanics (4) Schrieffer S

Prerequisite: Physics 217A.

Relativistic quantum field theory; perturbation theory; applications to quantum electrodynamics.

217C • Advanced Quantum Mechanics (4) Staff

Prerequisite: Physics 217B.

Theory of high energy particles; the content will vary. Possible topics are: strong interaction dynamics, weak interactions, particle symmetries, scattering at very high energies.

219 • Statistical Mechanics (4) Scalapino F

Prerequisites: Physics 205 and 215A.

Classical and quantum statistics, ensembles, entropy, H-theorem. Transport properties, critical phenomena, cluster techniques. Applications.

223A—B • Solid State Physics (4-4) Scalapino W—S

Prerequisite for 223A: Physics 215A. Prerequisite for 223B: Physics 215B.

Phenomenology and theory of the solid state. Symmetry, crystals, phonons, and band theory of metals. Transport properties and optical, magnetic, thermal, and dielectric properties. Low temperature properties, including superconductivity. Excitons, quasiparticles, and introduction to many-body theory.

224 • Nuclear Physics (4) Staff

Prerequisite: Physics 215B.

Nuclear forces. Nuclear models. Nuclear reactions and decay.

225 • Elementary Particle Physics (4) Staff W

Phenomenology of the particles of high energy physics and their strong, electromagnetic, and weak interactions. Fundamental symmetries, invariance principles, and the associated quantum numbers.

226A—B • Physics of Plasmas (4-4) Lewis

Prerequisite: Physics 210C.

Elementary interactions in plasmas, plasma kinetics, transport properties, plasma oscillations, magnetohydrodynamics, and magnetohydrodynamic waves.

227A • Principles of Magnetic Resonance (4)

Prerequisite: Physics 215A, or consent of the instructor.

Elements of the theory of magnetic resonance. The Bloch equations, macroscopic aspects of spin magnetism, interacting spin systems, relaxation phenomena and the method of moments. Hyperfine interactions in atoms and solids. Nuclear and electron spin resonance. Ferro- and antiferro-magnetic resonance.

231A—B • General Relativity and Relativistic Astrophysics (4-4) Hartle

Prerequisite: Physics 210 A—B.

The principle of equivalence, gravity as geometry, the differential geometry of curved spacetime, Einstein's equations, the relativistic stars, gravitational collapse, black holes, observational and theoretical cosmology, gravitational radiation, alternatives to general relativity.

240A—B—C • Instrumental Seminar (4-4-4) Elings

A seminar course consisting of a series of lectures by the staff and visiting lecturers on the basic principles of scientific instrumentation and student presentations of proposed solutions of instrumentation problems. A forum for student discussion of their research.

246A—B—C • Laboratory of Instrumentation (4-4-4) Elings F-W-S

Students participate in the design and construction of instruments to be used in laboratories in various departments on campus. In this course the students become involved in instrumentation problems in the scientific areas of their choice.

247 • Research Project in Instrumentation (1-3) Staff

Prerequisite: Physics 246C.

From his experience in 246, the student will select one of the cooperating research groups using instrumentation on the campus and will design and construct an instrument or system to be used by the selected research group.

248A—B—C • Instrumentation Electronics (4-4-4) Nicoli F-W-S

A practical introduction to laboratory use of circuit analysis, discrete semiconductor devices, analog integrated circuits, signal averaging, sensors and transducers, digital integrated circuits, digital systems, small computers, digital interfaces, data recording systems.

250 • Advanced Topics in Astrophysics (4) Staff

Prerequisite: Consent of the instructor.

The course will vary from year to year according to the currents of the times. Course may be repeated with a different topic.

251 • Advanced Topics in High Energy Physics (4) Staff

Prerequisite: Consent of the instructor.

The course will vary from year to year according to the currents of the times. Course may be repeated with a different topic.

252 • Advanced Topics in Solid State Physics (4) Staff

Prerequisite: Consent of the instructor.

The course will vary from year to year according to the currents of the times. Course may be repeated with a different topic.

253 • Advanced Topics in Optics and Spectroscopy (4) Staff

Prerequisite: Consent of the instructor.

The course will vary from year to year according to the currents of the times. Course may be repeated with a different topic.

254 • Advanced Topics in Nuclear Physics (4) Staff

Prerequisite: Consent of the instructor.

The course will vary from year to year according to the currents of the times. Course may be repeated with a different topic.

255 • Advanced Topics in Theoretical Physics (4) Staff

Prerequisite: Consent of the instructor.

The course will vary from year to year accord-

*See N-2 for 198-199 independent studies unit limitations.

ing to the currents of the times. Course may be repeated with a different topic.

259 • Teaching Assistant Seminar (1) Staff F, W, S

This course will cover the development of teaching techniques especially oriented to the teaching of lower division physics courses including laboratory instruction. Theoretical aspects will be covered at the beginning of each quarter and practical techniques will be discussed at an hourly weekly seminar. This is a required course for all teaching assistants.

260A • Seminar in Advanced Topics (1) Staff

260B • Seminar in Nuclear Physics (1) Staff

260C • Seminar in Molecular Physics (1) Staff

260D • Seminar in Theoretical Physics (1) Staff

260E • Seminar in Solid State Physics (1) Staff

260F • Seminar in High Energy Physics (1) Staff

594 • Special Topics (1-4) Staff FWS

Prerequisite: Consent of the instructor.

Special seminar on research subjects of current interest. Each staff member has his own seminar identified by the same number code as the 599 series.

595 • Group Studies (1-6) Staff FWS

Prerequisite: Consent of the instructor.

Each staff member has his own group studies course identified by the same number code as the 599 series.

596 • Directed Reading and Research (2-6) Staff FWS

Prerequisite: Consent of the instructor.

Individual tutorial. Reading and research in special topics including work done as the basis for the dissertation. Each staff member has his own directed reading and research courses identified by the same number code as the 599 series.

597 • Preparation for the Qualifying Examination (1-4) Staff FWS

Prerequisite: Consent of the graduate adviser.

Directed group or individual preparation for the doctoral qualifying examination. No unit credit is allowed toward advanced degrees.

599 • Dissertation Preparation (1-6) Staff FWS

Prerequisite: Consent of the instructor.

This course is reserved for writing the dissertation. May be repeated for credit up to 12 units. Each staff member has research course identified by the following number code.

48 AHLERS G
28 BARRETT P H
54 BRIGGS J
46 BRUSCA S P
03 CALDWELL D O
04 CANNELL D S
45 CARDY J L
05 EISBERG R M
06 ELINGS V B
07 FULCO J R
09 HANSMA P K
10 HARTLE J B
55 HOGG D R
11 HONE D W
12 JACCARINO V
56 KOHN W
27 LEE P H
14 LEWIS H W
15 MORRISON R J
40 NICOLI D F
16 PEALE S J
42 PRIGO R
51 SAENG R A
17 SAWYER R F
18 SCALAPINO D J
19 SCHRANK G E
52 SCHRIEFFER J
21 SUGAR R L
22 WALKER W C
34 YELLIN S J

Political Science

Professors

²Stanley V. Anderson, Ph.D., *UC Berkeley; public law; international law; Scandinavian studies.*

Gordon E. Baker, Ph.D., *Princeton University; American political and constitutional thought.*

^{1, 2, 3}Roger H. Davidson, Ph.D., *Columbia University; legislative behavior; political behavior; public policy.*

Haruhiro Fukui, Ph.D., *Australian National University; Japanese politics; comparative politics.*

Wolfram Hanrieder, Ph.D., *UC Berkeley; international politics; American and comparative foreign policy.*

Raghavan Iyer, D. Phil., Oxon., *political philosophy; contemporary theory.*

Alan P. L. Liu, Ph.D., *Massachusetts Institute of Technology; Chinese politics; comparative politics.*

Dean Mann, Ph.D., *UC Berkeley; American politics; natural resource policy and administration.*

¹Peter H. Merkl, Ph.D., *UC Berkeley; comparative politics; European politics.*

A. E. Keir Nash, Ph.D., *Harvard University; politics and population; constitutional law; political change.*

³Thomas S. Schrock, Ph.D., *University of Chicago; political philosophy; public law.*

Henry A. Turner, Ph.D., *University of Chicago; political parties, interest groups; political behavior.*

^{1, 3}Robert G. Wesson, Ph.D., *Columbia University; communist politics; Soviet studies; developing areas.*

Associate Professors

³Michael Gordon, Ph.D., *Harvard University; international politics; Western Europe.*

²Biliana Cicin-Sain, Ph.D., *UC Los Angeles; urban politics; public policy and administration, marine policy.*

John E. Moore, Ph.D., *Princeton University; public and regulatory administration. (Chairperson)*

Robert C. Noel, Ph.D., *Northwestern University; international relations; simulation; methodologies.*

Alan J. Wyner, Ph.D., *Ohio State University; state and local politics; public policy and administration.*

Assistant Professors

²J. Theodore Anagnoson, Ph.D., *University of Rochester; public policy; methodology; positive political theory.*

¹Gayle Binion, Ph.D., *UC Los Angeles; public law.*

Isidro Ortiz, Ph.D., *Stanford University; urban politics; Chicano politics.*

¹Cedric J. Robinson, Ph.D., *Stanford University; political theory; Black politics.*

¹Stephen M. Weatherford, Ph.D., *Stanford University; political analysis; public opinion.*

Professors Emeriti

- ¹Stephen S. Goodspeed, Ph.D., *UC Berkeley; international organization. (emeritus)*
 C. Herman Pritchett, Ph.D., *University of Chicago; constitutional law; judicial process (Emeritus, active service).*

¹Absent on Leave Fall 1979

²Absent on Leave Winter 1980

³Absent on Leave Spring 1980

Concerns of the department

"Political Science deals with the nature, the accumulation, the distribution, the exercise, and the control of power on all levels of social interaction, with special emphasis upon the power of the state." (Hans J. Morgenthau). In exploring the processes by which individuals and groups acquire and use power, political science draws on historical, economic, and behavioral data to illuminate government's role in the contemporary world. In addition to analyzing political behavior and public policy formation, the Department gives full attention to political philosophies and ideologies—to concepts that serve as ends or goals for individuals and groups.

The Department of Political Science offers a balanced program, emphasizing the integration of theory and practice rather than any single approach or methodology. In addition to its standard program, the Department also offers a Public Service Emphasis for undergraduate majors, giving students an opportunity to participate in governmental or political offices and to apply their analytical skills in a manner that relates theory to practice. An undergraduate Honors-Thesis program allows selected students to pursue small-group study and research, culminating in a major writing project. The M.A. and Ph.D. programs encompass work in all fields of political science, with students taking their work in small seminars and graduate courses.

Among the physical facilities for study and research is the distinctive POLIS Laboratory, which includes a computer-based simulation network for enacting real or hypothetical problems in local, national, and international politics. In addition to the POLIS Lab, the Department's instructional support resources include a workshop in comparative politics, a film library, and the government documents section of the UCSB Library.

Departmental Advising and Publications

The Political Science Department wishes to provide maximum individual guidance to all undergraduate majors in political science. The key figure in the advising process is the departmental undergraduate adviser in Ellison Hall 3829, telephone no. (805) 961-4192. The principal responsibility of the undergraduate adviser (a senior graduate student) is to explain departmental policies and requirements to undergraduate students and to help them plan their quarterly schedules and overall program of courses. Most administrative matters such as petitions regarding various requirements or to take Political Science 199 courses are handled by the undergraduate adviser.

The adviser keeps regular posted office hours of at least ten hours per week while school is in session during the

academic year. Students who are unable to come to posted office hours may ask for a special appointment at a different time. The adviser is also usually available on a limited basis during the summer session and during the week prior to the commencement of the fall quarter.

In addition to the undergraduate adviser, there are advisers for the Public Service Emphasis and the Honors Program in Political Science. Faculty members have posted office hours, and students are encouraged to consult with individual faculty members with regard to specific course content, or more general questions about the professor's area of specialization, or professional and career concerns. The Department has published a pamphlet, *Undergraduate Study in Political Science (1979)* as a useful introduction to the Department. M.A. and Ph.D. advisers are appointed by the Department and may be contacted through the Department Office.

Bachelor of Arts in Political Science

Preparation for the major

Required lower division courses: Political Science 1A—B—C *plus* Political Science 12 *or* both 5 and 10 *or* 100. (Transfer students with lower division courses focusing on political theory, comparative governments, international politics, or public administration, may, upon the recommendation of the undergraduate adviser, use these courses to satisfy the 1A—B—C requirements.)

Required work in cognate disciplines: Five courses to be distributed among the following three areas, with at least one course taken in each. Approved courses are indicated. Substitutions may be made with the consent of the Department.

Group I: History 4A—B—C, 12, 17A—B—C, 19, 46, 72, 86, 105, 108A—B, 125A—B, 127A—B, 128A—B, 167A—B, 168A—B, 171A—B, 173A—B, 174A—B, 175A—B—C; Economics 103, 112, 113A—B.

Group II: Economics 1, 2, 109 (109 not open to students who have taken Economics 1 and/or 2), 110, 114, 120, 126, 175.

Group III: Anthropology 2 *or* 101, 102, 103, 104, 106, 108, 110, 113, 114, 119, 134, Sociology 1 *or* 101, 2, 48, 120, 126, 129, 130, 131, 134, 148A—B, 167, 172, 173, 174; Geography 2, 106; Philosophy 108, Religious Studies 40, 141A—B—C, 176.

Upper Division major

Required upper division courses: 36 units which must include at least one course from each of the following three groups (12 units). (Upper division courses are not open to freshmen.)

Group I: Political Science 105, 121, 147.

Group II: Political Science 101, 110, 111, 112, 113, 114, 186, 187, 188, 189.

Group III: Political Science 115, 152, 153, 154, 155, 156, 157, 158, 180, 181.

The remaining 24 units may include courses from the above options (other than those used for the 12 unit requirement) as well as from other upper division Political Science courses not listed. No more than a *combined* total of eight units of courses numbered 190 and above (nor of

four units each in Political Science 190, 192, 193, 194, or 199) may apply toward major requirements.

Honors-Thesis Program: In the Winter Quarter of their junior year, students with outstanding academic records may apply for the Department's Honors-Thesis Program. Those accepted commence their work in the following quarter with a specially designed seminar; in their senior year they take additional seminar work and write a thesis exploring a topic in considerable depth. For information, students should inquire at the Department office.

Bachelor of Arts in Political Science with a Public Service emphasis

The Department offers a public service emphasis for undergraduate majors. The curriculum is somewhat different from the regular major because the course work focuses on the fields of Politics and Public Administration plus required work in Sociology, Economics, and Environmental Studies. Students in this emphasis usually serve a one quarter, full-time internship in a governmental or political office during their senior year. Internships are open to political science majors whether or not they choose the public service emphasis. To qualify for an internship, students are expected to have a 3.0 grade point average, junior or senior standing, and upper division political science coursework relating to the work they plan to perform as an intern. See the Public Service adviser for further details.

Preparation for the major

Required lower division courses: Political Science 1A—B—C *plus* Political Science 12 *or* both 5 and 10 *or* 100. (Transfer students with lower division credit in Political Science courses other than introduction to American government should consult the Public Service adviser concerning the remaining lower division requirements.)

Required work in cognate disciplines: Five courses to be distributed among the following two areas with two courses to be chosen from the first area including at least one History course, and three courses to be chosen from the second area as noted: Substitutions may be made with the consent of the Department.

Area I. History 4A—B—C, 12, 17A—B—C, 19, 46, 72, 86, 105, 108A—B, 125A—B, 127A—B, 128A—B, 167A—B, 168A—B, 171A—B, 173A—B, 174A—B, 175A—B—C; Economics 103, 112, 113A—B, (Economics History courses)
 Anthropology 2 (or 101), 102, 103, 104, 106, 108, 110, 113, 114, 119, 134,
 Geography 2, 106,
 Philosophy 108
 Religious Studies 40, 141A—B—C, 176.

Area II. Three courses from A, B, and C, at least two of which must be in the same group:

- A.** Economics 5, 110, 115, 120, 130, 131, 175
- B.** Environmental Studies 125, 135
- C.** Sociology 120, 126, 127, 131

Upper Division major

Required: 40 upper division units to be distributed as follows:

- A.** Political Science 172 or 173
- B.** Political Science 170 or 180 or 181 or 185
- C.** One additional course from A or B
- D.** Two courses from Political Science 152, 153, 154, 155, 156, 157, 158, 174, 175, 176, 177
- E.** Political Science 115 or 165
- F.** One course from Political Science 105, 110, 111, 112, 113, 121, 127, 147, 186, 187, 188, 189
- G.** Political Science 192 and either 196PS or 199 to be taken concurrently during one quarter of internship in a governmental or political office.

Combination Social Sciences major

Students interested in obtaining a major in the combined Social Sciences should see listing under "Social Sciences," in this catalog.

Master of Arts

The work offered by the Department falls into the following six fields: politics; public policy and administration; public law; international relations; comparative politics (including area studies); and political theory. The M.A. degree in political science is offered under *Plan I, the thesis plan; Plan II, the comprehensive examination plan; and Plan III, the public policy internship plan*. Applicants are encouraged to request from the Department a copy of the current "Graduate Program Statement" which offers a more detailed explanation of the program. Applicants must submit results of the Graduate Record Examination.

Plan I. Thesis Plan -Candidates must complete at least 30 units of course work, and credit for the thesis.

The required course work will normally be completed in graduate courses in political science. For certain programs, and with the approval of the Graduate Adviser, a maximum of eight units making up the required total of 30 may be included from graduate courses in related disciplines.

Candidates will be required to complete, in graduate standing, course work in three of the political science fields.

Before certifying a student for formal advancement to candidacy, the department reserves the right to satisfy itself as to the candidate's proficiency by means of special written or oral examinations.

Plan II. Comprehensive Examination Plan -Candidates must complete at least 36 units of course work.

The required course work will normally be completed in graduate courses in political science. For certain programs, and with the approval of the Graduate Adviser, a maximum of eight units may be included from graduate courses in a related discipline.

Candidates will be required to complete, in graduate standing, course work in three of the political science fields.

Candidates must pass oral examination in two fields, in addition to having completed two graduate courses or seminars outside of the examination fields.

Plan III. Public Policy Internship Plan -Candidates must earn 36 units of credit.

Candidates will be required to complete graduate

course work in at least three of the six fields of political science.

12 units must be in the field of public policy and administration.

12 additional units must be in the fields of American politics or public law (or an appropriate combination thereof).

8 units of credit will be awarded for academic work associated with a supervised internship experience.

Candidates must pass an examination in two fields, as named above.

Generally, first-year graduate students who have not had teaching experience elsewhere are not eligible for Teaching Assistantships.

Doctor of Philosophy

The award of the degree of Doctor of Philosophy is not based merely on the fulfillment of technical requirements, but signifies that the Department is satisfied that the candidate is professionally qualified as a political scientist, competent to carry on scholarly research and academic instruction in fields of specialization. The following specific requirements should be taken in this context.

Requirements

Admission Completion of the Master of Arts degree or its equivalent is the normal prerequisite for admission to the doctoral program. Admission is by approval of the Graduate Dean and by the departmental chairperson. Only strong performance in previous undergraduate or graduate studies will be considered as justification for undertaking work toward the doctorate. Applicants are encouraged to request from the Department a copy of the current "Graduate Program Statement" which offers a more detailed explanation of the program. Applicants must submit results of the Graduate Record Examination.

Residence The University of California requires a minimum of two years' full-time residence in graduate study for the doctorate, at least one year of which must be spent in continuous residence at the University. Normally, students will require two years of resident graduate study at this University before taking the qualifying examinations.

Languages The candidate must demonstrate a thorough knowledge of one foreign language or competence in the use of specialized research methods. Whatever option is chosen, it must be completed prior to taking the written qualifying examinations. Further details may be found in the "Graduate Program Statement."

Fields of Study The Ph.D. program centers on course work and preparation in three written examination fields plus course work in a fourth, non-examination field. From two to six graduate courses are considered normal in each examination field; three courses are required in the non-exam field. Graduate work taken at other institutions may be acceptable for both requirements. Political Science 203 or its equivalent is normally required of all Ph.D. candidates.

Typically, the student's field choices are made from among the following political science subfields: political theory, public law, public administration and public policy,

international relations, comparative politics (including selected area studies), and American politics (including political institutions and behavior at the local, state and national levels). However, it is also possible to tailor special fields to the interests of individual students. Some examples are: environmental politics, the political economy of development, political science education, political anthropology, linguistics and political analysis, etc. Through the Inter-campus Exchange Program complementary course work may be taken at other UC campuses.

Research Skills. The student may choose a foreign language option or a research techniques option to fulfill the "skills requirement" for the Ph.D. The language option entails demonstrating a thorough knowledge of a foreign language which is relevant to the student's major research interests. In cases where the student's program justifies it, non-native English-speakers may offer a native language under this option. The research techniques option involves specialized methodological training tailored to the student's major research interests. This option is sometimes associated with the choice of three methodological courses under the fourth, non-examination field requirement.

Examinations. Having fulfilled all other requirements of the program, a student may sit for written qualifying examinations. Written examinations are normally offered in the Fall, Winter and Spring. After successful completion of the written qualifying exams, the student will take an oral examination which will explore the individual's overall competence as a political scientist. Particular emphasis will be placed on the major field and on important substantive, epistemological, or methodological topics and problems in the discipline.

The Dissertation With the advice and approval of the doctoral committee, each student will select a dissertation topic in the major field of specialization. The dissertation must be based on original research and must make a significant contribution to knowledge in the field.

Teaching Assistantships. Each candidate will be required to qualify for and hold a Teaching Assistantship as part of the preparation for the Ph.D.

Career opportunities

In addition to providing a sound general education in the liberal arts, a major in Political Science is a particularly suitable preparation for careers in government service, law and journalism. A brochure entitled "Careers and the Study of Political Science" is available from the Undergraduate Adviser. Students may discuss career alternatives with the Undergraduate Adviser or other career counseling services on campus.

Teaching credentials

A bachelor's degree in Political Science is an acceptable major for entry into a Single Subject (secondary) or Multiple Subject (elementary) Credential Program.

Students completing this degree, who plan to teach at the secondary level in California, should apply to the Single Subject Credential Program in the area of Social Science. The State of California requires that credential candidates

demonstrate their subject matter competency in this teaching area. Subject matter competency can be established in one of two ways: either by passing the National Teachers Examination in this teaching area *or* by completing a State approved program. (The approved program consists of selected course work included in the degree program.) Students should consult with department advisers, or advisers in the Graduate School of Education about courses which, when completed, eliminate the need for taking the National Teachers Examination.

Students who wish to pursue a Multiple Subject (elementary) Teaching Credential are advised that the State of California requires that students complete either a Liberal Studies program (see details in section J of the catalogue), or pass the National Teachers Examination (Common Examination). It is quite feasible for students to complete a degree major and to simultaneously fulfill the requirements for the Liberal Studies program.

Admission to credential programs at UCSB also requires certain prerequisites. The following chart identifies these requirements.

	English 106	Ergonomics 109	Mathematics 100 A & B	Pre-Professional Experience
Multiple Subject Program	X	X	X	X
Single Subject Program	X	X		X

Correspondence information

Department of Political Science, University of California, Santa Barbara, California 93106 Phone: (805) 961-3431.

Political Science Lower Division courses

1A—B—C • Understanding Political Life (4-4-4) [E1]

Preferably taken in sequence. **A: Political thinking and political science.** (Baker, Iyer) Perennial questions and diverse responses, with emphasis on such central concepts as liberty, equality, power, authority, justice, law, and constitutionalism. Democracy and authoritarianism. The nexus between ends and means in political life. (F) **B: Comparative and International Politics.** (Gordon) Order and violence in national and international politics. The nation-state, nationalism, and political development. Power, elites, and responsiveness. Revolution and mass movements. The social base of politics: culture, socialization, and participation. Parties and groups. (W) **C: Governmental performance.** (Moore, Wyner) The promise and prospects of post-industrial societies. The problem of bureaucratic power and public accountability. Formation, administration, and evaluation of public policy. Political economy—objectives of equality and efficiency. The political community and pursuit of the public interest. (S)

5 • American Government: The Constitutional System (4) Baker [E1]

The functions, development and interpretation of the American Constitution; federalism; the role of the Supreme Court; civil liberties and civil rights. For Lower Division students only.

10 • American Government: The Political Process (4) Staff [E1]

Parties, interest groups, campaigns and elections; Congress and the Presidency. For Lower Division students only.

12 • American Government and Politics (4) Staff [E1]

Political ideas, institutions and processes of American government. The role of Congress and the President in policy formation and of the Supreme Court in interpreting the Constitution. Not open to students who have received credit for Political Science 5, 10, or 100 (F-W-S)

15 • American Government: Contemporary Issues of Public Policy (4) Staff [E1]

Prerequisite: An introductory course in American government or consent of instructor.

An analysis of selected major political conflicts and governmental programs in the United States. (S)

19 • Political Science Conference (3) Staff [E1]

Seminar on selected central themes in political science. Themes will vary according to instructor. This course may not be repeated. (F, W, S)

25 • Parapolitics and the City of Man (4) Iyer [E1]

The ends and means of political life in theory and practice, with emphasis upon broadening and heightening of individual and collective self-consciousness; classical dialect of transformation in contemporary context of global politics; different models of society of the future. Not offered in 1980-81.

49 • Library Research Methods in Political Science (2) Staff

Course on library research methods and techniques useful for political science students.

90A • Introductory Lab/Seminar in Policy Problems (2) Noel, POLIS Staff

An introduction, through participation in simulation and/or gaming exercises, to selected current problems in public policy, including urban, environmental and foreign policy problems. (90A may be taken independently of 90B.)

90B • Introductory Lab/Seminar in Policy Processes (2) Noel, POLIS Staff

An introduction, through participation in simulation and/or gaming exercises, to the relationship between policy-making processes and policy content, focusing on decision processes in the executive, legislative, and judicial branches of government at all levels. (90B may be taken independently of 90A.)

Upper Division courses

100 • American National Government (4) Staff [E1]

Institutions of our national government and the political ideas on which these institutions have been established, the role of Congress, the President, the courts, administrative agencies and regulatory legislation. Not open to students who have received credit for Political Science 5, 10, or 12.

101 • Political Inquiry (4) Noel [E1]

Theories, techniques and problems of quantitative and other approaches to the data of politics; research design and application; the role of values.

102 • Political Socialization (4) Cicin-Sain [E1]

The process, content, and goals of learning political values and behavior patterns. The application and significance of such characteristics in the functioning of political systems. Socialization as a theoretical and analytical component of political culture.

103 • Strategies in Politics (4) Anagnoson [E1]

A non-technical, introductory survey of game theory with emphasis on applications in everyday political and social behavior. Topics include the behavior of coalitions in legislatures, bargaining, competition among political parties, the consequences of electoral laws, etc. No mathematical background required.

104 • Political Research Methods and Data Analysis (4) Anagnoson, Weatherford [E1]

An introduction to the formulation of research problems, the use of survey research and demographic political data.

105 • Comparative Political Analysis (4) Merkl [E1]

The concepts, theoretical perspectives, and political phenomena central to comparative analysis and area studies. A core course generally recommended and in some instances required for advanced work in comparative government.

106 • Gaming in Social Analysis (4) Noel [E1]

Prerequisite: *Consent of the instructor.*

Applications of simulation and gaming methodologies in the analysis of social and political processes.

108 • Politics and Literature (4) Iyer [E1]

This course will explore problems concerning alienation, obligation, power, freedom, and fulfillment as treated by ancient and modern authors.

109 • Revolution and Mass Movements (4) Liu [E1]

Revolution as a special type of mass movement, focusing on the French, Bolshevik and Chinese Communist revolutions and comparing them with movements falling short of a total restructuring of the society, economy and polity.

110 • Political Concepts (4) Mansbridge, Iyer [E1]

Introduction to some of the main concepts of political theory such as the individual and the state, freedom and equality, political obligation and their relevance to modern society and government.

111 • Anarchist Thought (4) Iyer [E1]

An examination of the diverse and enduring strains of anarchist thought concerning the reconstruction of society, politics and the individual personality. Theories and programs from Godwin to Gandhi, the late 18th century to the present, will be considered with an emphasis on the relation between theory and practice.

112 • Marxism (4) Robinson, Wesson [E1]

Concepts of state, law, alienation, and the relationship between theory and practice. Historical dimensions, including the Hegelian heritage, Marxist theory, various stages of Marx's intellectual development, Engels' contributions, and the "socialism/communism" split current aspects of neo-Marxism.

113 • American Political Thought (4) Baker [E1]

The origin and development of significant political ideas in the United States, as expressed in the contributions of selected thinkers. (W)

114 • Democratic Theory (4) Mansbridge [E1]

An analysis of the philosophical bases of democracy, such as political obligation (why should I obey the state?), political equality (Why should one person have one vote?), liberty, consent, representation, and rights.

115 • Law in the Modern State (4) Anderson, Pritchett [E1]

Legal institutions in democratic societies, with particular reference to the United States. The role of lawyers, judges, and courts. The unique functions of the Supreme Court in the American political system. Judicial reasoning as reflected in selected decisions. (F)

116 • Comparative Legal Systems (4) Anderson [E1]

The origins, basic theoretical assumptions and actual functions of two legal systems—continental (civil) law and common law.

117 • Jurisprudence (4) Anderson, Schrock [E1]

Prerequisite: *Political Science 115 or consent of instructor.*

An inquiry into the nature of law and justice.

120 • Mass Media and World Affairs (4) Noel [E1]

An examination of the role of the mass media in shaping world affairs, including cross-cultural comparisons of press coverage and the study of institutional and behavioral processes involved in the "creation of international reality" in the media.

121 • International Politics (4) Gordon, Hanrieder [E1]

An examination of theories concerning the actions, interactions and relationships among nation-states.

122 • Selected Problems in International Politics (4) Staff [E1]

Prerequisite: *Political Science 121, or consent of instructor.*

Theoretical analysis of some significant problems in the relations among nation-states during the twentieth century. Likely topics: Origins of World War I; Munich Crisis; Origins of the Cold War; Evolution of East-West Relations; Vietnam War.

123 • Nuclear Strategy and Alliance Politics (4) Noel [E1]

The effects of technological advances on international politics with special emphasis on weapons of mass destruction, and their strategic role in interstate relations in general and the formation of alliances in particular.

124 • International Organization (4) Goodspeed [E1]

The nature and function of international organization, stressing an evaluation of the experience of the League of Nations and the United Nations; regional organizations and specialized agencies.

125 • International Law (4) Anderson [E1]

Prerequisite: *Political Science 115 or consent of instructor.*

Nature and sources of international law; international legal personality; nationality, territory, jurisdiction; diplomatic and consular agents; treaties; war; neutrality.

126 • International Relations of East Asia (4) Fukui [E1]

The foreign relations of China, Japan, and Korea as interpreted in terms of contemporary international relations theory and concepts.

127 • American Foreign Policy (4) Hanrieder, Noel [E1]

The United States in world politics. Policy making institutions, particularly the Presidency, Congress, State Department and the military establishment. Interaction between domestic and external politics. (W)

128 • Soviet Foreign Policy (4) Wesson [E1]

The foreign policies of the Soviet Union considered in relation to such concepts as continuity and change. Messianism and real-politik, tactics and strategy, coexistence expansion.

129 • The United States and Western Europe: The Troubled Partnership (4) Gordon [E1]

NATO and the problems of NATO cohesion and strategy as the Cold War has evolved; European and American fears of separate deals with the Soviet Union in an era of detente; European Unity and its challenge to the United States in matters of trade and monetary policy.

130 • Comparative Communist Systems (4) Wesson [E1]

A comparative examination and analysis of the Communist systems of Eastern Europe, Soviet Russia and China, with particular reference to sources of growing diversity in institutions, concepts of man and society, economic policy and the role of the party.

131 • China in World Affairs (4) Liu [E1]

The ideological and cultural attitudes of mainland China, with emphasis on general policies both within the Communist world and other areas (South Asia, Africa and America).

132 • Latin America in World Affairs (4) Staff [E1]

Relations of Latin America with the United States and other world powers; Pan-Americanism and its relation to world organization.

133 • Africa In World Affairs (4) Mugomba [E1]

The political economy of African international relations; economic dependency and underdevelopment; decolonization and liberation; the non-aligned movement; relations between Africa and the European Economic Community; the OAU and the UN, Commonwealth, Arab League, etc.

134 • Nationalism and Communism in East Asia (4) Fukui [E1]

Actions and interactions of the forces of nationalism and communism in East Asian politics, with emphasis on the role of organized groups representing those forces.

135 • Government and Politics of Japan (4) Fukui [E1]

The organization and operation of Japanese politics, with particular attention to domestic political forces and problems.

136 • Government and Politics of China (4) Liu [E1]

The ideology, structure, and functions of the Chinese political system, with emphasis on the nation-building process under the Communist regime.

139 • Government and Politics in Southeast Asia (4) Fukui [E1]

A general introductory survey of modern and contemporary developments in Southeast Asia.

140 • Politics of France and Italy (4) Merkl [E1]

The political culture, history, political parties and governmental organization of France and Italy.

141 • Politics of Germany (4) Merkl [E1]

The political culture, history, political and social forces, and governmental organization of Western Germany and Eastern Germany.

142 • British Politics (4) Gordon [E1]

The political culture, history, institutions and behavior of Great Britain.

143 • Government and Politics in the Soviet Union (4) Wesson [E1]

Ideological foundations. Structure and methods of the Communist Party. The apparatus of government and its development.

144 • Governments of Central and Eastern Europe (4) Wesson [E1]

The political cultures, ruling parties, ideological foundations and practices and socio-economic problems. Foreign policies, including analyses of cohesive and divisive forces within the Communist bloc.

145 • The Politics of Scandinavia (4) Anderson [E1]

The political culture, institutions, processes, and relations of the Nordic countries—Denmark, Finland, Iceland, Norway and Sweden. Emphasis on constitutional history.

146 • The Political Systems of Tropical Africa (4) Staff [E1]

A comparative analysis of the political systems of a selected number of new states in tropical Africa, with particular emphasis placed upon the social, economic and cultural setting of politics in these states.

147 • The Politics of Developing Areas (4) Wesson [E1]

A comparative analysis of the political systems of a selected number of African, Asian and Middle Eastern countries, with particular attention to the general problems of political development and modernization common to all of them.

148A—B • Governments of Latin America (4-4) Staff [E1]

A • A comparative study of governmental and political development, organization and practices in the states of Middle America. (S)

B • A comparative study of governmental and political development, organization and practices in the states of South America.

149 • Comparative Party Systems (4) Fukui [E1]

Analysis of the roles performed by political parties in a selected number of industrialized and developing nations. Relationships between party systems and such factors as economic development and social stability.

150 • Politics of the Middle East (4) Staff [E1]

The development of governmental institutions and political forces in the post-colonial era. Emphasis will be placed on relationships between internal cultural dynamics and international politics and examples will include the Arab-Israeli conflict.

152 • American Political Parties (4) Davidson, Turner [E1]

The nature, characteristics, and history of American political parties; party organization; political campaigns and finance; nominations, elections and electoral problems.

152L • American Political Parties Lab (1) Davidson, Turner

Laboratory exercises in the study of political parties with emphasis on party organization, nominations, elections and electoral problems. (When offered it must be taken concurrently with 152.)

153 • Political Interest Groups (4) Turner, Weatherford [E1]

The nature and function of organized interest groups and their impact upon public opinion and government.

154 • Public Opinion (4) Weatherford [E1]

A study of the nature and the means of formation of public opinion. Public opinion as a factor in popular government and as a control device in the modern state.

155 • American Legislatures (4) Davidson, Mann [E1]

The organization, operation, and politics of Congress and the state legislatures; problems of representation, leadership and relations with interest groups.

155L • American Legislatures Lab (1) Davidson, Mann

Political Science Laboratory in the organization, operation and politics of Congress and the state legislatures; problems of representation, leadership and relations with interest groups. (When offered it must be taken concurrently with 155.)

156 • Analysis of Political Behavior (4) Anagnoson, Wyner, Weatherford [E1]

Theories, methodologies and findings of the behavioral approach to the study of the political system and men in that system. Chief reference is to the American system.

157 • The American Presidency (4) Davidson, Mann [E1]

Analysis of the institution of the Presidency, its functions, formal and informal relationships, and its limitations within the American political system. Emphasis on the dynamics of the Presidency, including presidential personality, conception of role, impact of public opinion and responses to changes in the environment.

158 • Power in Washington (4) Anagnoson [E1]

An examination and assessment of the policy and political linkages between the White House and Capitol Hill—decision-making, legislative enactment, administrative implementation; the presidential establishment, bureaucratic politics and the politics of influence and access in Washington.

165 • Criminal Justice (4) Anderson, Schrock [E1]

An examination of local courts in particular, with emphasis on procedural problems and suggested reforms. The American adversary system is stressed within the context of comparative judicial administration.

166 • American Constitutional Law: Distribution of Power (4) Anderson, Nash [E1]

Prerequisite: Political Science 115 or consent of instructor.

The role of the Supreme Court as arbiter of federalism and separation of powers; interplay of political, social and economic forces.

167 • Constitutional Law: Civil Liberties (4) Pritchett [E1]

Prerequisite: Political Science 115 or consent of instructor.

The role of the Supreme Court as interpreter of constitutional freedom of expression and conscience; procedural guarantees and equal protection of the laws.

168 • Constitutional Law: Equal Protection (4) Nash [E1]

Prerequisite: Political Science 115 or consent of instructor.

The role of the Supreme Court as interpreter of political, social, and civil rights.

170 • Public Policy Analysis (4) Anagnoson [E1]

The assumptions, goals, content, and consequences of selected domestic policies, concentrating on the period since 1960. Discussion of the nature of collective action, methods of policy analysis and evaluation, and problems of implementation.

170L • Public Policy Laboratory (1) Anagnoson

Political Science Laboratory on public policy problems. Emphasis on federal decision making in different policy areas.

171 • Politics and Communication (4) Staff [E1]

The role of communications media and their influence on politics. How definitions of what is "news" and the way it is conveyed shape public thinking on political issues and affect candidates, causes, and public perceptions of government institutions.

172 • State and Local Government (4) Wyner [E1]

Basic problems and recent developments, with emphasis on state political forces, institutions and processes. Intergovernmental relations.

172L • State and Local Government Lab (1) Wyner

Political Science Laboratory in basic problems and recent developments, with emphasis on state political forces, institutions and processes. Intergovernmental relations. (When offered it must be taken concurrently with 172.)

173 • Urban Government and Politics (4) Cicin-Sain [E1]

Problems of politics and administration in urban and metropolitan areas.

173L • Metropolitan Government and Politics Lab (1) Cicin-Sain

Laboratory exercises in metropolitan government and politics with emphasis on local interest groups, local decision-making, and intergovernmental relations. (When offered it must be taken concurrently with 173.)

174 • Chicano Politics (4) Ortiz [E2]

Political life in the barrio, political behavior of the Chicano community and representation of Chicanos by elected officials and interest groups. (Same as Chicano Studies 174)

175 • Politics of the Environment (4) Mann [E1]

Analysis of environmental policy issues and their

treatment in the political process. Discussion of the interplay of substantive issues, ideology, institutions and private groups in the development, management, protection and preservation of natural resources and the natural environment.

176 • Black Politics in America (4) Robinson [E1]

A general survey of political phenomena in the Black community. American political institutions, law, legislation and administration will be examined in theory and practice to determine their function in relation to Black politics. (Same as Black Studies 176)

177A—B • Politics and Population (4-4) Nash [E1]

This 2 quarter-course sequence will explore changes in population growth, population migration, and demographic composition as political problems in both industrialized and non-industrialized countries. Political effects of population-induced social, economic, and environmental strains. Hidden vs. deliberate population policies, population control, "cultural-economic" imperialisms and political equity. Freedom, technology, population change and political values.

178 • Public Affairs Reporting (4) Reimer [E1]

Principles and practice of public affairs reporting. Discussion of ethical and moral principles of journalism, methods and techniques of reporting, the social, political, and economic environment of journalists. Public affairs reports will be assigned.

180 • Public Administration and Public Policy (4) Moore [E1]

The nature of American bureaucracy, behavior patterns of public officials, and the role of administration in the political process.

180L • Public Administration and Public Policy Lab (1) Moore

Political Science Laboratory in the nature of American bureaucracy, behavior patterns of public officials, and the role of administration in the political process. (When offered it must be taken concurrently with 180.)

181 • Public Administration: Organization and Process (4) Wyner [E1]

Concepts and issues of public administration, including theories of organization, decision making, administrative behavior and budgetary processes. Students planning to complete both Political Science 180 and 181 are encouraged to begin with Political Science 181.

184 • Comparative Administration (4) Staff [E1]

A comparative analysis of the public bureaucracies of a selected number of developed and developing countries, with particular attention being given to the cultural determinants of administrative norms and behavior.

185 • Government and the Economy (4) Moore [E1]

Government's evolving role in economic life; the cultural, political, and philosophical setting of government-business relations; the maintenance and moderation of competition; the goals, methods, and politics of regulatory administration. (F)

186 • Parapolitics and the City of Man (4) Iyer [E1]

The foundations and frontiers of politics; the interrelation of long-term goals and short-term objectives; political responsibility in the optimal use of global resources; alternative models of the society of the future.

187 • Classical Political Theory (4) Iyer, Schrock [E1]

The development of political theory from Plato and Aristotle to the sixteenth century.

188 • Modern Political Theory (4) Schrock [E1]

Development of political ideas from the sixteenth century to the nineteenth century.

189 • Recent and Contemporary Political Theory (4) Schrock, Iyer [E1]

Development of political ideas in the nineteenth and twentieth centuries.

190A • Laboratory/Seminar in Urban Policy Problems (2) Noel, POLIS Staff

An examination, through computer-based gaming and simulation, of selected problems in urban policy, with special emphasis on the relationships among social, political and economic policy alternatives and the dynamics of growth and decay. (190A may be taken independently of other 190 labs.)

190B • Laboratory/Seminar in Foreign Policy Problems (4) Noel, POLIS Staff [E1]

An examination, through participation in a "POLIS Network" diplomatic exercise, of selected international problem areas including great-power relations, arms control, economic and monetary problems, and selected regional subsystems. Policy-making structures and processes are also examined.

190C • Laboratory/Seminar in Environmental Policy Problems (3) Noel, POLIS Staff [E1]

An examination, through computer-based gaming and simulation, of selected problems in environmental policy and politics. Offerings of 190C will alternate between an urban air-pollution focus (the "METRO-APEX" simulation) and a water-pollution focus (the "River Basin Model"). Accordingly, 190C may be repeated for credit. (190C may be taken independently of other 190 labs.)

190P • Laboratory/Seminar in Polimetrics (2) Noel [E1]

An examination of the basic concepts of sampling, measurement, bivariate and multivariate analysis, casual interference, and the use of computer-based statistical packages as they relate to political analysis. In addition, a general understanding of statistical tests will be sought.

190S • Laboratory/Seminar in Social and Political Theory (2) Noel, POLIS Staff

An examination, through participation in a simulated society exercise ("SIMSOC") of selected problems in general social and political theory, including the problem of social order, legitimacy and collective versus individual decision. (190S may be taken independently of other 190 labs.)

192 • Field Research in Political Science (4-12) Davidson, Wyner [E1]

Prerequisites: Upper Division status, 3.00 overall GPA, approval by Department.

Directed research on the political process through participant observation and relevant reading. Individually assigned, instructed and supervised field work. Students will examine first hand behavior in leading political roles in American politics.

194 • Group Studies (1-4) Staff

Subject to Departmental approval, students may repeat this course. Themes will vary according to instructor. Only four units may apply to the major.

195 • Honors Seminar (4) Staff

Prerequisite: Open only to Upper Division students who have been accepted into the Department's Honors Program.

An intensive analysis of the approaches, problems, and methodologies of a particular sub-field of Political Science.

196 • Senior Seminar in Political Science (4) Staff

197A—B—C • Senior Thesis in Political Science (4-4-4) Staff

Prerequisites: Senior standing, 3.0 grade-point average, and approval of department.

Selected seniors may pursue individual, significant research projects with close tutorial supervision of faculty advisers. May be repeated for up to 12 units, but only four units may apply to major requirements.

***199 • Independent Studies in Political Science** (1-5) Staff

Admission by special permission only. For majors.

No more than 4 units of 199 may count toward completion of the major requirements.

No more than a combined total of eight units of courses numbered 190 and above (nor of four units each in Political Science 190, 192, 193, 194 or 199) may apply toward the major requirements. See Public Service Emphasis for an exception.

*See N-2 for 198/199 independent studies unit limitations.

Graduate courses

Since the emphasis in some seminars changes from year to year, detailed course descriptions are available in the department office during the quarter prior to the seminar offering.

203 • The Nature of Political Inquiry (4) Noel, Iyer

204 • The Design and Analysis of Political Research (4) Weatherford

206 • Advanced Political Research Methods I (4) Anagnoson

207 • Advanced Political Research Methods II (4) Anagnoson

- 210 • Political Theory** (4) Iyer
- 215 • The American Governmental Process** (4) Davidson, Mann, Turner
- 220 • Constitutional Interpretation** (4) Nash
- 225 • International Relations** (4) Gordon, Hanrieder (F)
- 230 • Comparative Political Systems** (4) Merkl
- 235 • American Public Administration** (4) Mann
- 237 • Seminar in Ideology and Personality** (4) Liu
- 240 • Seminar on Classical Political Thinkers** (4) Iyer, Schrock
- 241 • Seminar in Modern Political Thinkers** (4) Iyer, Schrock, Robinson
- 242 • Seminar on Contemporary Political Thinkers** (4) Iyer, Schrock
- 243 • Seminar in Political Concepts** (4) Iyer, Schrock
- 248 • Seminar in American Political Thought** (4) Baker
- 250 • Seminar in Political Socialization** (4) Cicin-Sain
- 252 • Seminar in Public Opinion and Political Participation** (4) Weatherford
- 253 • Seminar in Political Interest Groups** (4) Turner
- 254 • Seminar in the Legislative Process** (4) Davidson, Mann
- 255 • Seminar in State Government and Politics** (4) Baker, Wyner
- 256 • Seminar in the American Presidency** (4) Davidson, Mann, Turner
- 257 • Seminar in Urban Government and Politics** (4) Ortiz, Cicin-Sain
- 258 • Seminar in Politics and Population Policy** (4) Nash
- 259 • Seminar in Political Parties** (4) Turner
- 260 • Seminar in the Judicial Process** (4) Pritchett
- 261 • Seminar in Public Law** (4) Anderson, Nash, Schrock
- 262 • Seminar in American Constitutional Law** (4) Binion, Nash, Pritchett
- 263 • Seminar in Administration of Justice** (4) Anderson
- 264 • Seminar in American Jurisprudence** (4) Baker
- 271 • Seminar in International Politics** (4) Gordon, Wesson
- 272 • Seminar in International Law and Organization** (4) Anderson
- 273A—B • Politics of the International Economics** (4-4) Gordon
- 274 • Seminar in Theories of International Politics** (4) Hanrieder
- 275 • Seminar in Regional Subsystems in International Relations** (4) Noel
- 277 • Seminar in American Foreign Policy** (4) Hanrieder
- 278 • Seminar in Comparative Foreign Policy** (4) Hanrieder
- 279 • Seminar in Chinese Foreign Policy** (4) Liu
- 280A—B • Seminar in Soviet Studies** (4-4) Wesson
Prerequisite for 280A: Political Science 230 or equivalent. 280B: Political Science 280A or equivalent.
- 281 • Seminar in Comparative Communist Systems** (4) Wesson
- 282A—B • Seminar in Latin American Governments** (4-4)
- 283A—B • Seminar in Western European Politics** (4-4) Gordon, Merkl
- 284 • Seminar in Politics and Socio-Economic Change** (4) Nash
- 285 • Seminar in Chinese Politics** (4) Liu
- 286 • Seminar in Japanese Politics** (4) Fukui
- 287 • Seminar in South Asian Studies** (4) Staff
- 288 • Seminar in African Politics** (4) Staff
- 289 • Seminar in Political Development** (4) Wesson
- 290 • Seminar in The Study of Public Administration** (4) Moore
- 291 • Seminar in Public Administration and Public Policy** (4) Moore
- 293 • Seminar in Comparative Public Administration** (4) Staff
- 294 • Seminar in Public Policy and Administration of Natural Resources and the Environment** (4) Mann
- 295 • Seminar in Urban Policy and Administration** (4) Wyner, Cicin-Sain
- 297 • Seminar in Analysis of Public Policy** (4) Anagnoson
- 594AA—594ZZ • Special Topics** (1-4) Staff
- 595AA—595ZZ • Group Studies** (4) Staff
- 596AA—596ZZ • Directed Reading and Research** (2-6) Staff
- 597AA—597ZZ • Individual Study for Master's Comprehensive Examination and Ph.D. Examinations** (1-12) Staff
- 598AA—598ZZ • Master's Thesis Research and Preparation** (1-12) Staff
- 599AA—599ZZ • Ph.D. Dissertation Preparation** (1-12) Staff

Psychology

Professors

Gerald S. Blum, Ph.D., *Stanford University; cognitive and affective processes, experimental psychodynamics, hypnosis.*

Marilynn B. Brewer, Ph.D., *Northwestern University; social judgement research; field research methodology (Chairperson).*

Daphne Blunt Bugental, Ph.D., *UC Los Angeles; social and personality development, interpersonal communication.*

Harry J. Carlisle, Ph.D., *University of Washington; physiology of motivation; regulation of hunger, thirst, and temperature.*

¹John W. Cotton, Ph.D., *University of Indiana; mathematical learning theory, statistics, computer-assisted instruction.*

John M. Foley, Ph.D., *Columbia University; visual perception, cognitive processes.*

³Walter C. Gogel, Ph.D., *University of Chicago; visual perception, psychophysics, perceptual development.*

³Robert M. Gottsdanker, Ph.D., *UC Berkeley; set and attention, information processing, aging.*

David L. Hamilton, Ph.D., *University of Illinois; person perception, inter-racial behavior, personality, and social psychology.*

Jerry W. Higgins, Ph.D., *University of Michigan; personality and psychopathology.*

Gerald H. Jacobs, Ph.D., *University of Indiana; vision, physiological.*

³Howard H. Kendler, Ph.D., *University of Iowa; conceptual development, theoretical psychology, philosophy and history of psychology.*

³Tracy S. Kendler, Ph.D., *University of Iowa; developmental, learning, problem solving.*

Charles G. McClintock, Ph.D., *University of Michigan; social motivation, development, social behavior.*

David M. Messick, Ph.D., *University of North Carolina; social, quantitative, decision making.*

Robert W. Reynolds, Ph.D., *University of Buffalo; physiology and biochemistry of motivation and emotion.*

Associate Professors

Roberta Klatzky, Ph.D., *Stanford University; human memory, cognitive processes, psycholinguistics.*

Elijah P. Lovejoy, Ph.D., *University of Pennsylvania; learning, intercultural psychology*

¹Loy D. Lytle, Ph.D., *Princeton; psychopharmacology, brain neurotransmitters and behavior, developmental neurobiology.*

Richard E. Mayer, Ph.D., *University of Michigan; human learning and cognition.*

³A. Robert Sherman, Ph.D., *Yale University; behavior modification, experimental psychopathology, behavioral self-management.*

Assistant Professors

Diane Cuneo, Ph.D., *UC San Diego; cognitive development*

John M. Hale, Ph.D., *UC San Diego; learning, animal behavior processes, computer applications.*

Ho, Hsiu-Zu, Ph.D., *U of Colorado; behavior genetics (Acting Asst.)*

Jack M. Loomis, Ph.D., *University of Michigan; visual perception.*

² ³Russell Revlin, Ph.D., *Carnegie-Mellon University, learning, reasoning, psycholinguistics, cognitive processes.*

Professors Emeriti

William D. Altus, Ph.D., *New York University; individual differences, personality.*

Alma B. MacGregor, Ph.D., *Columbia University.*

¹Absent on Leave, Fall 1980

²Absent on Leave, Winter 1981

³Absent on Leave, Spring 1981

⁴Absent on Leave, 1980-81

⁵Absent on Leave in Residence, 1980-81

Concerns of the Department

The major in psychology at UCSB is designed to provide the student with an appreciation of the scientific study of behavior. Psychology represents an extremely broad discipline, ranging from the study of behavior of the simplest organisms, to the behavior of humans and groups of humans in complicated situations. Six main areas of psychology are represented within the department: psychophysiology, perception, learning, developmental, personality, and social, with an emphasis upon empirical research and the theoretical analysis of fundamental aspects of animal and human behavior. Students interested in a Psychology major are strongly urged to examine our upper division course offerings to see if these are consonant with their interests in Psychology. As the student will note, courses dealing with humanistic psychology are not included in our curriculum nor do we have a training program in the clinical applications of psychology.

The Department of Psychology offers majors leading to two degrees, one the Bachelor of Science degree with a major in Physiological Psychology and the other the Bachelor of Arts degree, with majors in general Psychology, Experimental Psychology, and Developmental Psychology. Although the three majors within the B.A. degree require basically the same premajor preparation, they involve different curricula at the upper division level.

Premajor ¹

¹ Students planning to declare a major in Physiological Psychology should follow the lower division requirements stated in the Preparation for the major section for the Bachelor of Science degree in Physiological Psychology.

Prior to admission to any of the Psychology majors leading to the Bachelor of Arts degree, the student must have completed the following lower division courses:

Mathematics Math 1 or its equivalent (This requirement may be met by completing two years of high school algebra.)

Science One science course from the following: Biology 20, 22, or 23, Chemistry 25; Physics 10; Zoology 25 or 40; or their equivalents.* (Students may take Natural Science 1A or 1B or 1C to fulfill this requirement. Natural Science 1A, B and C will fulfill the Area B General Education requirement in its entirety.)

*Students planning to declare a Developmental Psychology major must take Biology 20, 22, or 23.

Psychology Psychology 1, General Psychology; Psychology 5, Analysis of Data in Psychology; Psychology 7, Introduction to Experimental Psychology.

These lower division courses must be completed with a combined average grade of 2.0 or above, and 1) only one C- will be allowed; 2) no grade lower than a C- will be acceptable; 3) classes may not be taken on a pass/not pass basis. Before these requirements are completed, the student may choose to declare a pre-Psychology major; however, premajor status does not guarantee automatic admission to major status. Upon satisfactory completion of the preparation courses, the student should complete a change of major petition, available in the Psychology Office, Room 1332 in the Psychology Building, and obtain the appropriate signatures. At this time, the student must declare which of the three majors described below is to be pursued. *Petitions for admission into any of the Psychology majors must be filed by the time the student has accumulated 130 total units. Change of major petitions will only be evaluated during the first week of classes of each quarter.*

NOTE: All Psychology courses numbered 110 and above are open only to students who have achieved major status in any of the four Psychology majors.

The Bachelor of Arts degree program in general Psychology is recommended for students whose interests are in obtaining a liberal arts education and in understanding contemporary issues in psychology. The requirements of this major can be fulfilled with a variety of courses, so that students may choose to specialize in a given substantive area, or to select a broader, more varied set of courses. Consultation with an adviser is strongly recommended for students in the general Psychology major who plan to enroll in graduate programs. (Also, see Preparation for Graduate Study.)

The Experimental Psychology major stresses the development of laboratory experience along with required lecture courses that focus on research in selected areas rather than on broad surveys. The Experimental Psychology major provides a background which is very appropriate for students who wish to attend graduate school.

The major in Developmental Psychology is designed for students who are primarily interested in developmental processes. Those who intend to pursue a paraprofessional position working with children will find this program appropriate. Consultation with an adviser is strongly recommended for students in the Developmental Psychology major who wish to continue to graduate study. (Also, see Preparation for Graduate Study.)

The major in Physiological Psychology, which leads to the Bachelor of Science degree, is designed for those students who are interested in an intensive study of the relationship between brain function and behavior. Such a study requires background preparation in mathematics, chemistry, and physics. Within the major there is a common core of classes involving a study of neuron physiology, neurophysiology and neuroanatomy; biochemical, endocrine, and pharmacological regulations in the central nervous system, and behavioral and psychological data related to these processes. There is flexibility such that the student may elect emphases in various areas such as sensory psychophysiology, neuropsychology, the physiology of emotion and motivation, and genetic and developmental psychobiology. This is also an appropriate major for students intending to pursue graduate training in physiological psychology.

Departmental Advising and Publications

There are many sources of information and academic advising within the Psychology Department. As a first step, students may see our peer advisers who will answer general questions about the department, each major track (i.e., psychology, experimental, developmental, or physiological), the courses related to these majors, choices of graduate schools, GRE preparation, and who to see about career planning. A staff undergraduate adviser is also available in the Psychology Office to answer specific questions about University and major degree requirements, transfer credits, course substitutions and/or waivers and other evaluative problems dealing with one's academic career. This adviser also maintains the academic files of our departmental majors. One faculty member is appointed to act as a general undergraduate adviser and will be able to deal with problems related to academic affairs. Further, for the Developmental Psychology majors, a developmental faculty member is designated to act also as a general undergraduate adviser and deals with academic and career problems as they relate to the Developmental Psychology major.

In addition to these general advisers, all faculty members act as academic advisers. Students are encouraged to become acquainted with the faculty members and to consult with them about their programs or academic plans for the future. Students with questions regarding a certain area of psychology should talk with a faculty member affiliated with that area. Names of the faculty and their research interests are available in the main office of the Psychology Department along with other handouts pertaining to Psychology majors.

Students are also encouraged to join the Psychology Undergraduate Union and/or Psi Chi, the Santa Barbara

chapter of The National Honor Society in Psychology. Members from these organizations represent the undergraduate opinion on the major committees within the Psychology Department and welcome student input from their fellow majors. Information about how to join may be obtained from the peer advisers.

Bachelor of Arts—Psychology

Preparation for the major

Required: Psychology 1 • General Psychology, 5 • Analysis of Data in Psychology, and 7 • Introduction to Experimental Psychology, Math 1 or its equivalent, and 1 science course as listed in the premajor requirements.

Upper Division major

Required: Thirty-six units of upper division psychology courses.

Majors must successfully complete at least one course from each of three of the five areas represented in Groups I and/or II in the following section. Group I consists of survey lecture courses. Group II consists of advanced lecture and intensive laboratory courses. Where possible, students are encouraged to enroll in both the Group I and Group II course within an area, preferably taking the Group I course first.

Bachelor of Arts—Experimental Psychology

Preparation for the major

Required: Psychology 1 • General Psychology, 5 • Analysis of Data in Psychology, and 7 • Introduction to Experimental Psychology, Math 1 or its equivalent, and 1 science course as listed in the premajor requirements.

Upper Division major

Required: Thirty-six units of upper division psychology courses. Majors must successfully complete six courses in Group II, including three laboratory courses. (For areas and specific courses, see following section.)

Bachelor of Arts—Developmental Psychology

Preparation for the major

Required: Psychology 1 • General Psychology, 5 • Analysis of Data in Psychology, and 7 • Introduction to Experimental Psychology. Additionally, Math 1 or its equivalent and Biology 20, 22, or 23 or the equivalent are required.

Upper Division major

Required: 40 units of upper division Psychology courses, as follows:

Psychology 121 • Psychological Measurement

Psychology 123 • Developmental Psychology (To be taken in the fall quarter of the junior year as information

about the major and planning of each student's future program will be conducted in this class.) Students who have completed Psychology 123 previously or who have completed a comparable developmental psychology course at another four-year college must consult with the Developmental Psychology adviser to formulate their major program prior to the beginning of their senior year.

Two of the following Group II courses chosen from separate areas: Psychology 110A or 110B (Perception); Psychology 116 or 117 (Learning); Psychology 112 (Social Behavior). These must be selected from different areas, i.e. Psychology 116 and 117 together will not fulfill this requirement. When selecting these courses, students should note the prerequisites of the Group IV courses they intend to take.

One additional upper division Psychology elective. When selecting this course, students also should make note of the prerequisites for the Group IV courses below.

Three Group IV courses, numbered Psychology 140-147, excluding those with a "P" designation. These explore developmental aspects of different fields within Psychology.

One eight-hour practicum/seminar (Psychology 140P-147P). This involves supervised participation in various community organizations that serve children. Each Group IV course is followed in the subsequent quarter by a coordinated practicum. In order to qualify for the practicum, the student must a) be a senior, b) have scheduled a program in advance with the undergraduate adviser, c) have completed Psychology 121, and d) have completed the related Group IV course.

Bachelor of Science—Physiological Psychology

Preparation for the major

Students must take the following courses or their equivalents: Psychology 1 • General Psychology, 7 • Introduction to Experimental Psychology; Biology 22 or 11A and 11B or Zoology 40 and 40L; Chemistry 1A—1AL, 1B—1BL, 1C—1CL, 6AB, 8AB; Physics 6A—6AL, 6B—6BL, 6C—6CL; Mathematics 34A—B—C. (8 units of Math 34S will equal 34AB.)

Note: Psychology 106 is recommended for lower division students wishing to enter the major; it *may not* be taken after or concurrently with Psychology 113A.

Upper Division major

Majors must successfully complete 46 units of upper division Psychology courses as follow: Psychology 113A, B and L; Psychology 132, 133A and 137; 8 elective units of upper division Psychology courses; and one of the following sequences: Psychology 110A or B, 110L and 116 *OR* Psychology 116 and 116L, 110A or B. Students who otherwise qualify, and who plan to pursue graduate work, are encouraged to take independent studies (199) in their senior year.

Group I and Group II offerings by area

Area	Group I	Group II
Physiological	106 • Brain & Behavior (May not be taken concurrently with or after Psychology 113A, B, or L)	113A • Physiological Psychology 113B • Physiological Psychology 113L • Laboratory in Physiological Psychology
Perception	107 • Introduction to Perception (May not be taken concurrently with or after Psychology 110A, B, or L)	110A • Perception 110B • Perception 110L • Laboratory in Perception
Learning	108 • Learning & Memory (Should not be taken concurrently with or after Psychology 116, 116L, 117, 117L)	116 • Conditioning & Learning 116L • Laboratory in Animal Learning 117 • Human Learning 117L • Laboratory in Human Learning
Personality	103 • Abnormal Personality	114 • Personality Dynamics 115L • Laboratory in Personality
Social	102 • Social Aspects of Behavior (Should not be taken concurrently with or after Psychology 112.)	112 • Social Behavior 112L • Laboratory in Social Behavior

Group III courses are designed for the advanced student with specialized interests and are open to majors in all the degree programs. Students are urged to note course prerequisites, which vary from course to course. *Although students may enroll for as many units as they wish, with respect to fulfilling unit requirements for the major the following limits apply:*

Course	Unit Limits
160AA—ZZ • Special Topics in Psychology	8 units from two courses with different letter designations
190AA—ZZ • Seminars in Psychology	6 units from three courses with different letter designations
194 • Special Group Studies in Psychology	12 units, providing titles are different. Students may apply only 12 units combined of 194, 197H, 198, and 199 credit towards the Psychology majors.
197H • Honors Research in Psychology	12 units. No more than 12 units combined of 197H, 194, 198 and 199 may be applied towards fulfilling the major requirements.
198 • Readings in Psychology	12 units. Students may apply only 12 units combined of 198, 194, 197H, and 199 credit towards the Psychology majors.
199 • Independent Research in Psychology	12 units. Students may apply only 12 units combined of 199, 198, 197H, and 194 credit towards the Psychology majors.

Group IV courses cover developmental aspects of different fields within psychology and are numbered 140-147 excluding the practicums which are designated with the letter "P" (i.e., 140P).

Passed/Not Passed option within the major

Psychology majors are permitted to take a maximum of

eight (8) units from the following courses on a passed/not passed basis to fulfill major requirements for any of the Psychology majors:

135A—B—C • **Field Experience in Psychological Settings**
140P-147P • **Practicums in Developmental Psychology**
190AA—ZZ • **Seminars in Psychology**
194 • **Group Studies in Psychology.**
196H • **Honors Seminar in Psychology**
197H • **Honors Research in Psychology**
198 • **Readings in Psychology**
199 • **Independent Research in Psychology**

Students who wish to take more than eight units of the above courses or any other Psychology courses passed/not passed may do so. However, such courses will *not* apply to the major requirements.

Undergraduate preparation for graduate study

Preparation for graduate study in psychology (including clinical psychology) at the doctoral (Ph.D.) level ordinarily requires a broad background in psychology and laboratory experience. Any of the four majors can provide sufficient background for graduate studies; however, within the general Psychology major, students are encouraged to complete at least one laboratory course from the Group II series.

Since master's (M.A.) programs are typically more circumscribed than doctoral programs, the prospective master's student is advised to consider the specific requirements of those programs of interest in planning the major.

Selection of courses to fulfill the General Education requirement in the natural and social sciences should be made in consultation with department advisers to ensure adequate preparation in specific areas such as mathematical psychology, physiological psychology, perception, learning, developmental psychology, clinical psychology, personality, psycholinguistics, or social psychology.

General information concerning graduate programs (including admission requirements) in the United States and Canada appears annually in a booklet entitled "Graduate Study in Psychology" published by and available on request from the American Psychological Association, 1200 Seventeenth Street N.W., Washington D.C., 20036. More detailed information on programs of study, course offerings, and faculty in residence is available on request from specific departments. Students contemplating graduate study are advised to obtain such information early in their undergraduate careers and no later than the junior year. Students may also consult with their departmental advisers concerning graduate study.

Career Opportunities

Information concerning career opportunities in Psychology is available in the Department office or in the Career Resource Room at the Counseling Center. Students considering a career in psychology are encouraged to write for a free booklet, *A Career in Psychology*, available from the American Psychological Association, 1200 Seventeenth Street N.W., Washington, D.C., 20036. This booklet describes in detail various vocational areas within psycholo-

gy and provides "case histories" illustrating the functions psychologists perform in specialty settings. This booklet also describes the opportunities available at each level of education and training (i.e., B.A., M.A., Ph.D., etc.) and discusses the trends in the development of psychology as a profession and its probable future.

Graduate program

Admission

Applications for admission may be made for Fall quarter only of each year. Requests for application materials for admission to the Psychology Graduate Program WILL NOT BE PROCESSED AFTER JANUARY 10th. *The deadline for receipt of all application materials is February 1st.* The Department offers work leading to the Ph.D. and M.A. degrees in psychology; however, students will be admitted to graduate study only if they plan to continue on to the Ph.D. degree and give evidence of competence to undertake training for that degree. Specialized training is offered in six fields: developmental, learning, perception, biopsychology, personality, and social psychology. The applicant must fulfill the general requirements for admission to graduate status and in addition, at the time of application, must submit evidence of acceptable performance on two selection tests: the Verbal, Quantitative, and Analytical portions of the Aptitude Test of the Graduate Record Examination, and the Graduate Record Examination in Psychology. The results from the Graduate Record Examination should be sent directly to the Department of Psychology. Normally, all applicants will have an undergraduate major in psychology; however, outstanding students who have majored in other areas are encouraged to apply.

Psychology

Instructors are listed with course offerings in the quarterly *Schedule of Classes*. Students should also consult with the Department for additional information.

Lower Division courses

1 • General Psychology (4) [E1]

The requirements of the course will include subject participation in low risk psychological experiments or completion of a short paper.

An introduction to the subject matter and methods of psychology including the physiological basis of behavior, learning and memory, perception and cognition, social behavior and personality. (F,W,S)

5 • Analysis of Data in Psychology (5) [E1]

Prerequisites: Math 1 or 10 or their equivalents.

Elementary statistical inference, including the Sign test, Z test, t test, correlation, and chi-square test. Simple descriptive statistics. The logic of statistical inference, including the central limit theorem and discussion of sampling distributions. (F,W,S)

7 • Introduction to Experimental Psychology (5) [E1]

Prerequisites: Psychology 1 and 5.

Introduction to the planning and execution of experiments in psychology and to the analysis and interpretation of data. (F,W,S)

Upper Division courses

Group I. Courses in this category are survey lecture courses and have no prerequisites. Although they count as upper division courses for credit towards the major, they are generally not intended for students who are *advanced* majors. Prospective majors may take these courses as Lower Division students.

101 • Principles of Psychology (4) [E1]

Open to Upper Division students who do not have credit for Psychology 1. Prerequisites: May be offered in substitution for Psychology 1, but does not fulfill upper division major requirements. May not be taken after Psychology 1. The requirements of the course will include subject participation in low risk psychological experiments or completion of a short paper.

An introduction to scientific psychology. Coverage will include such topics as sensation, perception, learning, motivation, memory, language, cognitive processes, individual differ-

Doctor of Philosophy

The candidate must comply with the following departmental requirements. The student must complete a paper equivalent to a master's thesis even though he does not choose to obtain an M.A. degree. The student must satisfy a high criterion of performance in the proseminar and research courses (higher than that required for the M.A.) with a summary of research progress required during the first year. Experience as a Teaching Assistant in Psychology is required before the degree can be granted. The Psychology Specialty Examination must be passed before advancement to candidacy for the Ph.D. degree. In addition, the candidate must write an acceptable doctoral dissertation, satisfactorily complete the Doctoral Oral Qualifying Examination, and meet grade, residence and other University graduate requirements.

Teaching credentials

Students who complete a major in this department may be eligible to pursue a California teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180 Phelps Hall.

Correspondence Information

The Department of Psychology, University of California, Santa Barbara, California 93106. Phone: (805) 961-2844 or 961-2791.

ences, frustration and conflict, personality, behavior pathology, and social behavior.

102 • Social Aspects of Behavior (4) [E1]

Should not be taken concurrently with or after Psychology 112.

An introduction to social psychology including attitudes and group dynamics; role conflict, interpersonal influence, reference groups, communication and opinion change, motivated perception, and perception of persons. (F,W,S)

103 • The Abnormal Personality (4) [E1]

Analysis of disorders with psychogenic components, including neuroses, anxiety states, character disorders, psychosomatic illness, and psychoses. (F,W,S)

105 • Introduction to Child Psychology (4) [E1]

Prerequisites: May not be taken concurrently with or after Psychology 123; not recommended for Developmental Psychology majors.

A basic course on child behavior and development.

106 • Brain and Behavior (4) [B2]

May not be taken concurrently with or after Psychology 113A, 113B, or 113L.

An examination of contemporary research and theory dealing with the relation between the brain and psychological variables. (F,W,S)

107 • Introduction to Perception (4) [E1]
May not be taken concurrently with or after Psychology 110A, 110B, or 110L.

An elementary course in perception in which the basic phenomena are demonstrated and their interpretations and implications considered. (F,W,S)

108 • Learning and Memory (4) [E1]
Should not be taken concurrently with or after Psychology 116 or 117.

The methods by which humans process, store, and retrieve information. (F,W,S)

109 • Organizational Psychology (4) [E1]
 This course is concerned with the interaction of individual, social and environmental forces on behavior within organizational settings. Such topics as job satisfaction, leadership, the motivation to work, and the physical and social design of work environments will be covered.

Group II. This category includes intensive laboratory or lecture courses.

NOTE: All Psychology courses numbered 110 and above are open only to students who have achieved upper division major status or by permission of the instructor. (Upper division major status is defined as admission into any one of the four majors and completion of Psychology 1, 5 and 7 or their equivalents.)

110A • Perception (4) [E1]
Prerequisites: Psychology 1, 5, and 7.

The role of organizational processes, cue systems, and learning in the perception of object characteristics such as color, form, size, orientation, and distance.

110B • Perception (4) [E1]
Prerequisites: Psychology 1, 5, and 7.

The examination of sensory processes and the application of psychophysical methodology to study the response to sensory information.

110L • Laboratory in Perception (5) [E1]
Prerequisites: Psychology 1, 5, and 7, and either 107 or 110A or 110B.

A laboratory course emphasizing the formulation and testing of experimental hypotheses in perception as related to problems selected by the student to be of special interest to him/her.

112 • Social Behavior (4) [E1]
Prerequisites: Psychology 1, 5, and 7.

A review of the major problem areas in experimental social psychology including attitudes, social conformity and influence, and social interaction.

112L • Laboratory in Social Behavior (5) [E1]
Prerequisites: Psychology 1, 5, 7, and 112.

Methods, techniques, and typical experimental research in social psychology. Lecture and laboratory.

113A • Physiological Psychology (4) [B2]
Prerequisites: Biology 22 and Chemistry 25 or their equivalents; Psychology 1, 5 and 7. (Psychology 106 is recommended.)

The physiological mechanisms of behavior.

113B • Physiological Psychology (4) [B2]
Prerequisite: Psychology 113A or permission of the instructor.

The physiological mechanisms of behavior.

113L • Laboratory in Physiological Psychology (5) [B2]
Prerequisites: Psychology 113A and 113B.

A study of the techniques and experimentation in physiological psychology. Lecture and laboratory.

114 • Personality Dynamics (4) [E1]
Prerequisites: Psychology 1, 5, and 7 or permission of instructor.

Discussion of the role of unconscious mental forces in shaping personality. Case history materials and illustrative research included.

114L • Laboratory in Personality (5) [E1]
Prerequisites: Psychology 1, 5, 7, and 114.

Topics of current interest in personality with concurrent experimentation, analysis of data, and preparation of laboratory reports.

116 • Conditioning and Learning (4) [E1]
Prerequisites: Psychology 1, 5, and 7. Not open to students who have taken Psychology 111A.

Principles of instrumental and classical conditioning. Topics may include: avoidance learning, stimulus generalization, discrimination, and other aspects of learning by animals and humans.

116L • Laboratory in Animal Learning (5) [E1]

Prerequisites: Psychology 1, 5, 7 and 116. May be taken concurrently with 116. Not open to students who have taken Psychology 111L.

Methods, techniques, and typical experimental research in animal learning.

117 • Human Learning (4) [E1]
Prerequisites: Psychology 1, 5, and 7. Not open to students who have taken Psychology 111B.

Principles of human learning, memory and cognition. Topics may include: concept formation, skill learning, verbal learning, memory for meaning, and other cognitive processes.

117L • Laboratory in Human Learning (5) [E1]

Prerequisites: Psychology 1, 5, 7 and 117. May be taken concurrently with Psychology 117. Not open to students who have taken Psychology 111L.

Methods, techniques, and typical experimental research in human learning.

Group III and Group IV. Courses in this category are designed for the advanced student with special interests in substantive and theoretical areas of psychology. NOTE: All Psychology courses numbered 110 and above are open only to students who have achieved upper division major status or by permission of the instructor. (Upper division major status is defined as admission into any one of the four majors and completion of Psychology 1, 5 and 7 or their equivalents.)

120 • Formal Models in Psychology (4) [E1]

Prerequisites: Math 10 or its equivalent; Psychology 1, 5, and 7.

An analysis of selected mathematical and computer models of psychological processes with consideration given to the value and weaknesses of such theories in understanding behavior.

121 • Psychological Measurement (4) [E1]

Prerequisites: Psychology 1, 5 and 7.

Consideration both of the theoretical foundations of psychological measurement; including problems of reliability, validity, norms and prediction, and of the techniques by which aptitude, achievement, and personality tests are constructed and evaluated.

122 • Motivation and Emotion (4) [E1]
Prerequisites: Psychology 1, 5, and 7.

An examination of the evolution of ideas concerning the problem of human motivation. Several theories of motivation are considered and these are contrasted and evaluated in the light of empirical facts. Emphasis is on current literature, and the relevance of the various theories to classroom performance and to motivational change in programs is discussed. Students will be introduced to both mechanistic conceptions of motivation (e.g., instinct and drive theories) as well as to more cognitive theories (e.g., field theory, achievement theory, attribution theory). Examples will be drawn from data with human as well as infrahuman subjects.

123 • Developmental Psychology (4) [E1]
Prerequisites: Psychology 1, 5, and 7.

Analysis of the influence of developmental processes on behavior.

124 • Comparative Psychology (4) [E1]
Prerequisites: Psychology 1, 5, and 7.

Analysis of behavior of different species.

125 • The Exceptional Child (4) [E1]
Prerequisites: Psychology 1, 5, and 7.

The study of children with educational, physical and emotional handicaps.

126 • History and Systems of Psychology (4) [E1]

Prerequisites: Psychology 1, 5, 7, and permission of the instructor.

An analysis of the epistemological bases of the discipline of psychology combined with a historical review of its development followed by a description of the current status of the field.

127 • Psychology of Language (4) [E1]
Prerequisites: Psychology 1, 5, and 7.

The psychological nature of linguistic theory; linguistic structure as a factor in learning, perception, and comprehension; language acquisition; multilingualism; models of language.

128 • Human Thinking and Problem Solving (4) [E1]

Prerequisites: Psychology 1, 5, and 7.

An examination of theories and supporting evidence regarding the nature of human thought processes.

129 • Behavioral Approaches to Psychotherapy (4) [E1]

Prerequisites: Psychology 1, 5, 7, and either 103 or 114.

An introduction to the basic principles and methods of behavior modification, including desensitization, operant conditioning, social modeling, expressive training, and aversion therapy. Related discussion concerning the identification of maladaptive behavior, the specification of treatment operations, and the criteria for assessing therapeutic change.

131 • Psychodynamic Approaches to Psychotherapy (4) [E1]

Prerequisites: Psychology 1, 5, 7, and either 103 or 114.

An introduction to the basic concepts of psychodynamically oriented psychotherapy. Particular emphasis is directed toward the traditional psychoanalytic, as well as the neo-Freudian, approaches to the treatment of maladaptive behavior patterns.

132 • Sensory Processes (4) [B2]

Prerequisites: Biology 22; Psychology 1, 5, 7 and 106 or 113A

Physiological and psychophysical approaches to the study of sensory systems.

133A • Psychopharmacology (4) [B2]

Prerequisites: Biology 11A or 22 and Chemistry 25 or their equivalents; Psychology 1, 5, 7 and 113A or Biology 105.

An examination of the neuroanatomical and neurochemical substrates for psychoactive drug action. Emphasis will be placed on achieving an understanding of the various ways in which drugs alter neurotransmission among cells in the central and peripheral nervous system.

133B • Psychopharmacology (4) [B2]

Prerequisites: Psychology 133A or permission of the instructor.

An examination of the mechanisms by which drugs alter physiological and behavioral responses in mammals. Emphasis will be placed on understanding the actions of psychoactive drugs in terms of their effects on known neuroanatomical and neurochemical mechanisms involved in behavioral states such as sleep and waking, nociception, mental diseases, and consummatory behavior.

134 • Cooperation, Competition, and Conflict (4) [E1]

Prerequisites: Psychology 1, 5, 7 and either 112 or 102.

A study of the psychological and social psychological bases of intragroup and intergroup cooperation, competition, and conflict in animal and human behavior.

135A—B—C • Field Experience in Psychological Settings (4-4-4) [E1]

Prerequisites: Psychology 1, 5, 7, and either Psychology 103 or 114 or 129, senior majors, and permission of the instructor.

The student must take 135A and 135B in sequence, while continuation in 135C is optional. Since enrollment is limited, interested students are advised to contact the instructor at least several weeks in advance of the fall quarter.

Supervised field experience in settings providing psychological services with opportunities for observation and participation. Students will spend approximately 6 hours per week in psychological settings, attend weekly class meetings, read related material, and prepare written reports. (135A-Fall, 135B-Winter, 135C-not offered 1980-81)

136 • The Psychology of Skill (4) [E1]

Prerequisites: Psychology 1, 5, 7, Junior or Senior Psychology major or permission of instructor.

An analysis of motor coordination and information-processing skills from the points of view of underlying mechanisms, acquisition, and individual differences.

137 • Hormones, Brain Function and Behavior (4) [B2]

Prerequisites: Biology 11A or 22 and Chemistry 25 or their equivalents; Psychology 113A or Biology 105.

The role of hormones in the regulation of behavior.

138 • Interpersonal Processes (4) [E1]

Prerequisites: Psychology 1, 5, 7, and either 102 or 112. Students who have taken 160E1 may not take this course.

Review of research and theory in social perception and its influence on interpersonal relationships, including impression formation, attribution theory, self-perception, friendship formation and courtship.

139 • Psychology of Sex Differences (4) [E1]

Prerequisites: Psychology 1, 5, and 7. Students who have taken Psychology 160XD, 160XR, or 160ZS may not take this course.

The nature of sex differences will be studied from the viewpoint of psychology. Critical issues include: What sex differences have been demonstrated to exist? What are the underlying causes (e.g., biology, socialization) of existing sex differences?

141 • Perceptual Development (4) [E1]

Prerequisites: Psychology 1, 5, 7, and either 110A or 110B. Priority given to Developmental Psychology majors.

An examination of the evidence concerning perceptual development from birth to maturity. Although results from both animal and human research will be considered, the emphasis will be on perceptual learning and development in the human. Such topics as the following will be considered: the effect of reduced and enriched environments on perceptual development, the sensory and perceptual abilities of the neonate, the evidence for critical periods, the development of spatial and object perception, the development of symbols and representations, perceptual disabilities, and the history and theories of perceptual learning and development as viewed in the general context of the nativism-empiricism controversy.

141P • Practicum in Perceptual Development (8) [E1]

Prerequisites: Psychology 1, 5, 7, 123, and 141. Students must be Developmental Psychology majors with senior standing. Students who have taken 161ZI may not take this course. Only 8 units may be taken in the 140P-147P series.

Students will work under the supervision of an appropriate staff member at a local agency dealing with problems related to perceptual development four half days a week. There will also be a two-hour seminar each week in which theoretical issues in perceptual development will be discussed. Readings in the area will result in a class paper.

142 • Cognitive Development (4) [E1]

Prerequisites: Psychology 1, 5, 7, 123, and ei-

ther 108, or 117. Priority given to Developmental Psychology majors.

An examination of experimental evidence relevant to cognitive development from birth to maturity. Human development will be emphasized, although some animal research will be examined. The general concept of development will be discussed and cognitive development will be considered from a number of points of view including learning theory, intelligence testing, linguistic theories, Piaget's theory, and relevant theories of central nervous system development.

142P • Practicum in Learning Disabilities (8) [E1]

Prerequisites: Psychology 142. Students must be Developmental Psychology majors with senior standing. Only 8 units may be taken in the 140P-147P series.

This practicum will be conducted in the Goleta Union School District. Students will work under the supervision of special education teachers four half days a week. Children with educational disabilities; i.e., perceptual, language, learning, and cognitive defects, will be the focus of study. A two-hour seminar on psychological research relevant to educational deficits will be given once a week. Each student will present a paper on a relevant topic agreed upon with the instructor.

143 • Developmental Socialization (4) [E1]

Prerequisites: Psychology 1, 5, 7, 123, and either 112 or 138. Priority given to Developmental Psychology majors.

Social development in infancy and childhood. Biological substrates, environmental sequence, and developmental processes will be discussed in relationship to social behavior.

143P • Practicum in Developmental Socialization (8) [E1]

Prerequisites: Psychology 1, 5, 7, 123, and 143. Students must be Developmental Psychology majors with senior standing. Students who have taken 161NS may not take this course. Only 8 units may be taken in the 140P-147P series.

One half day, four days a week field experience at a local agency dealing with developmental problems under the supervision of an appropriate staff member. There will be a two-hour seminar each week focusing on social and personality development. In addition there will be readings in the area and a required presentation of relevant research in class.

144 • Language Acquisition (4) [E1]

Prerequisites: Psychology 1, 5, 7, 123, and either 108 or 127. Priority given to Developmental Psychology majors. (Students who have taken Psychology 160ZL may not take this course.)

Current theory and data concerning the language acquisition process will be reviewed. The course will focus on the development of phonology, syntax, semantics, and communicative ability. The works of Rimas, Chomsky, Brown, Glucksberg, Klaus, and others will be discussed.

144P • Practicum in Language Acquisition (8) [E1]

Prerequisites: Psychology 1, 5, 7, 123, and 144. Students must be Developmental Psychology majors with senior standing. Students who have taken 161VL may not take this course. Only 8 units may be taken in the 140P-147P series.

Students will work under the supervision of an appropriate staff member in an educational setting one half day, four days a week. They will

concentrate on one of several developmental problems such as language acquisition in the preschool child, the learning of English as a second language, or reading difficulties. Each week students will discuss their experiences in a two-hour on-campus seminar. Students will also be responsible for a written and oral report.

145 • Motivation and Personality Development (4) [E1]

Prerequisites: Psychology 1, 5, 7, 123, and upper division standing. Priority given to Developmental Psychology majors.

Students will be introduced to theories relating to the development of personality and social motivation. Some of the areas discussed will include competence and achievement motivation, moral development and cognitive styles. Implications will be drawn from research areas for classroom behaviors. Students will be introduced to psychoanalytic, social-learning and cognitive-development approaches to psycho-social development. Some key research programs within each approach will be considered and when possible, the findings of two or more approaches will be compared and contrasted.

145P • Practicum in Motivational and Emotional Development (8) [E1]

Prerequisites: Psychology 1, 5, 7, 123, 145 and upper division standing. Students must be Developmental Psychology majors. Only 8 units may be taken in the 140P-147P series.

One half day, four days a week field experience under the supervision of an appropriate staff member. Placement will be in a pre-school or elementary school setting. There will be a two-hour seminar each week focusing on motivational and emotional development with particular attention paid to such problems as underachievement. In addition, there will be readings in the area and a paper.

146 • The Psychological Development of the Infant (4) [E1]

Prerequisites: Psychology 1, 5, 7, 121, and 123. Priority will be given to Developmental Psychology majors.

Empirical and theoretical work concerning the psychological development of the infant will be reviewed. The following topics will be investigated as they relate to the developing infant: physical development, motoric development, perceptual development, cognitive development, and social development.

146P • Practicum in Infancy Development (8) [E1]

Prerequisite: Psychology 146

Students will work under the supervision of an appropriate staff member at a local agency dealing with infants four mornings a week. Both normal and atypical development will be of interest. A two-hour, on-campus seminar concerning infant development will be held once a week. Students will be required to write a paper and give an oral presentation on some aspect of infant development

147 • Psychology of Adult Aging and Human Abilities (4) [E1]

Prerequisites: Psychology 1, 5, 7, 123 and upper division standing. Priority given to Developmental Psychology majors

Changes in psychological abilities attributable to normal adult aging. Included are broadly conceived abilities such as are measured by tests of intelligence. Also included are more specific

types of information processing in which perceptual judgments or rapid decisions are made. The present state of knowledge on these changes will be discussed along with theories accounting for the changes and problems in the design of empirical studies. Consideration will be given to the societal and motivational matrix within which aging occurs.

147P • Practicum on Behavioral Concomitants of Adult Aging (8) [E1]

Prerequisites: Psychology 1, 5, 7, 123 and 147. Students must be Developmental Psychology majors with senior standing. Only 8 units may be taken in the Psychology 140P-147P series.

Students will work four half days a week under the supervision of an appropriate staff member at a local agency dealing with adult aging. Both normal and exceptional patterns of behavior will be of interest. A weekly two hour seminar will be held with an emphasis on relating the student's experiences to the literature in the area. The student will write a term paper, again emphasizing this relationship.

150 • Advanced Analysis of Data in Psychology (5) [E1]

Prerequisites: Psychology 1, 5, and 7.

Application of statistical methods to the design and analysis of psychological investigations and to the interpretation of quantitative data in psychology. Lecture and laboratory.

151 • Computer Applications in Psychology (4) [E1]

Prerequisites: Psychology 1, 5, and 7.

An introduction to computer programming and the utilization of computers in the investigation of human behavior.

160AA—ZZ • Special Topics in Psychology (4) [E1]

Prerequisites: Psychology 1, 5, and 7 and permission of the instructor. Course may be repeated once and up to 8 units major credit will be given providing letter designations are different.

Lectures in special areas of interest in contemporary psychology. Specific course titles to be announced by the department prior to each quarter.

190AA—ZZ • Seminars in Psychology (2)

Prerequisites: Psychology 1, 5, 7, and permission of the instructor. Course may be repeated twice and up to 6 units major credit will be given providing letter designations are different.

Small group seminars in selected areas for advanced undergraduates. Students may suggest seminars to be organized under the direction and sponsorship of faculty members.

194 • Special Group Studies in Psychology (2-4)

Prerequisites: Psychology 1, 5, 7, and consent of instructor and Department chairperson. No more than 4 units per quarter may be taken. Course may be repeated for a maximum of 12 units, providing titles are different. Students may apply only 12 units combined of 194, 197H, 198, and 199 credit towards fulfilling the major requirements. Intensive study and research in a group situation. Limited to groups of 2 to 12 students

196H • Honors Seminar in Psychology (4)

Prerequisites: Psychology 1, 5, and 7, 16 upper division units in Psychology from UCSB and permission of the instructor. Students must have a

minimum 3.5 overall GPA, 3.6 GPA in UD Psychology, and have completed one Group II course. All qualified students will be invited to apply in the Psychology Office at the end of Spring quarter. Students not meeting the minimum requirements may be nominated for admission by a member of the faculty. All final decisions for enrollment will be made by the coordinator of the seminar.

An honors seminar organized into a series of talks and discussions on research problems in Psychology by faculty from the various areas represented in the department. A substantial reading list will be assigned and bi-weekly papers will be expected. This course will be offered on a passed/not passed basis only, and the requirement for a Pass will be full participation in all aspects of the course and completion of all the assignments.

197H • Honors Research in Psychology (1-5)

Prerequisites: Completion of Psychology 196H. This course may be repeated once and no more than 12 units combined of 194, 197H, 198, and 199 may be applied towards fulfilling the major requirements.

Independent research under the supervision of a faculty member. Students will prepare an honors thesis at the completion of the project which will be presented orally to interested faculty and must be approved by the faculty sponsor and a second member of the faculty who represents the area in which the research was undertaken. Completion of 196H and the Honors Thesis will qualify the student for psychology Honors recognition.

***198 • Readings in Psychology (1-5)**

Prerequisites: Advanced status with a B average in previous college work. Readings in Psychology under the guidance of a faculty member in the Department. Students wishing to enroll should prepare a short plan of study.

198 courses are limited to no more than 5 units in one quarter and no more than 12 units may be applied towards fulfilling Psychology major requirements. Students may apply only 12 units combined of 199, 197H, 198, and 194 credit towards fulfilling the major requirements.

***199 • Independent Research in Psychology (1-5)**

Prerequisite: Advanced standing with a B average.

Independent research under guidance of a faculty member in the department. Students wishing to enroll should prepare a short plan of study for their course work.

199 courses are limited to no more than 5 units in one quarter and no more than 12 units may be applied toward fulfilling the major requirements. Students may apply only 12 units combined of 199, 197H, 198, and 194 credit towards fulfilling the major requirements.

*See N-2 for 198/199 independent studies unit limitations

Graduate courses

Full graduate status in psychology or permission of the instructor is prerequisite to all graduate offerings.

221A • Design and Measurement (4)

Experimental design and statistical analysis in

psychological research. Includes basic probability, sampling and distribution theory, hypothesis testing and estimation.

221B • Design and Measurement (4)

Prerequisite: Psychology 221A or permission of the instructor.

Experimental design and statistical analysis in psychological research. Analysis of variance and related topics.

221C • Multivariate Analysis in Psychology and Related Social Sciences (4)

Prerequisites: Psychology 221A and B or permission of the instructor.

The use in psychology of the general linear model, multiple regression, discriminant function analysis, factor-analysis, and principle components analysis.

222 • Social Psychology and Decision Making (4)

Examination of conflict and cooperation, group effects on individual performance, subjective probability, choice and human information processing.

223 • Personality (4)

Structure, development, and dynamics of personality. Consideration of major personality theories.

224 • Learning (4)

Introduction to contemporary methodological and theoretical developments in the field of learning

225 • Motivation (4)

Analysis of contemporary theories and models of motivation.

226 • Developmental Psychology (4)

Introduction to contemporary developmental psychology. Although the emphasis is on human development, infrahuman development is included.

227 • Human Memory and Cognitive Processes (4)

Introduction to theoretical issues, methodology, and basic data in the areas of verbal learning, psycholinguistics, and cognitive processes. Topics include models of memory; methodology and empirical findings of verbal-learning research; and cognitive processing of linguistic material

228 • Perception (4)

Analysis of psychophysical relations in sensory processes with stress on detection, scaling, discrimination, spatial and temporal resolution and the interaction of cue systems in perceptual behavior.

229 • Physiological Psychology (4)

Examination of neural and endocrine mechanisms underlying vertebrate motivational systems.

230 • Psychophysiology of Vision (4)

Consideration of the physiological and psychophysical data bearing on the major features of vision in vertebrates.

231 • Advanced Techniques in Physiological Psychology (4)

Prerequisite: Psychology 229.

Advanced techniques in behavioral research utilizing physiological methods, with particular emphasis on primates.

234 • Stimulus and Response Measurement (4)

Examination of the theory and practical problems of stimulus and response measurement in psychology.

235 • Psychophysiology of Audition (4)

Prerequisite: Psychology 229 or permission of instructor.

Physiological and psychophysical approaches toward analysis of the hearing process.

236 • Graduate Developmental Practicum

Prerequisites: Psychology 226

Involves supervised field experience working with community agencies that provide services to children or the elderly. Activities might focus on program development, program implementation, or program evaluation. Students will also participate in a related seminar. (The practicum may be repeated if the content is progressive or topically different, but no more than 2 course credits may be counted toward the degree.)

237 • Cognition (4)

An in-depth analysis of advanced topics in human cognition. The course will include discussion of the cognitive processes involved in areas such as human thinking, problem solving, memory and learning

238 • Social Cognition (4)

Review of current research in person perception, social judgment

242A • Hypnosis as a Research Tool (4)

Combined lecture-laboratory course on uses of hypnosis as a research tool in diverse fields of psychology. Students participate in screening of hypnotic subjects under supervision and also design and execute experiments in areas of their own special interest.

242B • Hypnosis as a Research Tool (4)

Prerequisite: Psychology 242A.

Continued laboratory experience with students carrying out individual projects under supervision. Also discussion of hypnotic experiments growing out of a conceptual model of the mind.

243 • Behavior Modification (4)

Survey of behavior modification procedures and the theories underlying their development. Topics include systematic desensitization and variants thereof, assertive training, drugs, operant conditioning procedures, hypnosis, extinction procedures, and aversive conditioning. Prior familiarity with learning theories required

244 • Psychopathology (4)

Experimental approaches to the etiology, processes, and modification of deviant behavior, with emphasis upon the psychoses.

248 • Seminar in Methodological issues in Developmental Psychology (4)

Prerequisite: Psychology 226.

An examination of the advantages, and limita-

tions of various approaches to the study of the developing organism, including the comparative, the developmental, the cross-cultural, the ecological and the experimental-manipulative approach.

250 • Decisional and Social Processes (4)

A review of the psychological and social bases of decision making, choice behavior, and various patterns of social interaction.

251 • Research In Naturalistic Settings (4)

Readings, discussion and practical experience in designing and conducting experiments and quasi-experiments in field and other naturalistic settings; focus on related methodology, e.g., survey measures, unobtrusive measures, observation methods. Implications will be drawn for research on adult social behavior and attitudes, and for research on child socialization processes.

260 • History and Systems of Psychology (4)

An analysis of the epistemological bases of the discipline of psychology combined with a historical review of its development followed by a description of the current status of the field.

261 • Conceptual Problems in Psychology (4)

Analytic techniques of philosophy of science applied to historical and contemporary systems of psychology.

262 • Formal Models (4)

This course concentrates on mathematical models for behavior. Several specific models and programs are discussed in detail, and these formal theories are compared with more informal, verbal theories.

263A—B • Computer Simulation of Psychological Processes (4)

Prerequisite for 263B is 263A.

An up to date review of research on computer simulation of psychological processes. Some of the processes to be considered in detail are thinking, learning, understanding teaching, dialogue, and conflict resolution.

264 • Computer-Assisted Instructional Systems (4)

A methods course in computer-assisted instruction.

265 • Comparative Behavior (4)

Analysis of behavioral and physiological data and theories through comparative methods.

271 • Spatial Perception (4)

An examination of experimental, methodological, and theoretical approaches to the study of the perception of extent and the interaction of spatial and other characteristics in the achievement of a stable visual world.

272 • Decisional Sequences (4)

The time-course description of information-processing and self-initiated activities, and the postulated underlying mechanisms.

285 • Cognitive and Motivational Factors In Personality Development (4)

Prerequisites: Psychology 226 or consent of instructor.

The origins of a few social-motivational systems (e.g., moral, achievement) will be examined from several different theoretical perspectives. The interplay of cognitive and motivational processes will be emphasized and stage-theoretic and attributional approaches to this problem will be considered

594A—594Z • Special Topics (3)

Special seminar on research subjects of current interest. Each faculty member has his own letter designation as follows: Blum, 594GB; Brewer, 594MB; Bugental, 594DB; Carlisle, 594HC; Cotton, 594JC; Cuneo, 594DC; Foley, 594JF; Gogel, 594WG; Gottsdanker, 594RG; Hale, 594MH; Hamilton, 594DH; Higgins, 594JH; Jacobs, 594GJ; Kendler, H., 594HK; Kendler, T., 594TK; Klatzky, 594RK; Loomis, 594JL; Lovejoy, 594EL; Lytle, 594LL; Mayer, 594RM,

McClintock, 594CM; Messick, 594DM; Revlin, 594RR; Reynolds, 594BR; Sherman, 594RS

596 • Directed Reading and Research (2-8)

The purpose of this course is to provide supervised experience in experimental design and laboratory procedures on selected topics, including the formulation of experimental problems, discussion of relevant literature and the analysis and interpretation of experimental results. Required of all first, second, and third year psychology graduate students. Minimum of two units per quarter. No more than half the graduate units necessary for the Master's Degree may be taken in 596.

597 • Individual Study for Ph.D. Examinations (1-12)

Preparation for Ph.D. examinations under super-

vision of chairperson of student's doctoral committee. Course is limited to no more than 24 units total

598 • Master's Thesis Research and Preparation (2-6)

Research and preparation for the Master's thesis. Course is limited to no more than 12 units total. Since the student is already granted six units credit toward the degree, no unit credit will be given.

599 • Ph.D. Dissertation Research and Preparation (2-6)

Empirical and theoretical investigations of special problems in psychology in relation to dissertation research. Course is limited to no more than 12 units total.

Public and Social Affairs

Advisory committee

(See appropriate departmental entries for faculty information.)

J. Theodore Anagnoson, Ph.D., *Assistant Professor of Political Science (Coordinator/Graduate Advisor)*.

Richard P. Appelbaum, Ph.D., *Associate Professor of Sociology*.

Richard A. Berk, Ph.D., *Professor of Sociology*.

Richard Flacks, Ph.D., *Professor of Sociology*.

David Gold, Ph.D., *Professor of Sociology (Director)*.

Dean E. Mann, Ph.D., *Professor of Political Science*.

John E. Moore, Ph.D., *Associate Professor of Political Science*.

Henry A. Turner, Ph.D., *Professor of Political Science*.

Concerns of the program

Quality service in the public sector is a vital, growing requirement of our society. As the demand for governmental services grows, there is a corresponding call for able, humane leaders who are skilled and sensitive to the needs of the public they serve. The Master of Arts Program in Public and Social Affairs has been developed to prepare graduate students in the social sciences for careers in elective office or as administrators in governmental and public affairs.

The Master of Arts Program in Public and Social Affairs is interdisciplinary in approach, drawing from the resources of three major disciplines concerned with the quality of life in contemporary society. Course work in the fields of political science, sociology and economics is combined with the practical experience of internship with elected office holders and key administrators in policy-making positions of government. Courses in other fields may be substituted, depending on the interests of the individual student.

Students interested in program evaluation will find Soc

209ABC, a year long practicum in evaluation research, a rewarding experience. Supplementary work in a policy area and in the basis for public decisions (Econ 100, 102 or 205 or Pol Sci 297) will produce an intensive graduate education in program evaluation. Students interested in specializing in program evaluation should take as much social statistics as possible, ideally through the level of multivariate data analysis.

Departmental Advising and publications

Each student in the program is assigned an advisor from one of the two participating departments, Political Science and Sociology. In addition, the Graduate Advisor for the program acts as a general coordinator and source of information. The program maintains an informal internship and job file, rendering assistance as required. Students should consult the Program Statement for additional information.

Admissions requirements and prerequisites

Undergraduate preparation for admission is comparable to that of students preparing for graduate work in Political Science or Sociology. In addition the program is particularly interested in students with strong backgrounds in particular public policy fields, economics, social scientific research methods and statistics. Students interested in program evaluation will find a thorough undergraduate preparation in statistics and data analytic techniques as those apply to the social sciences most helpful, although the relevant courses can be taken at UCSB.

Applications for admission are accepted throughout the year according to the deadlines of the Graduate Division.

Master of Arts

Plan I (thesis). At least 36 quarter units and a thesis are required. 28 of the 36 will be comprised of two courses from two of the departments (Economics, Sociology, Political Science), and three from the third. Eight of the units are devoted to a thesis, which comes out of the experience of a 30 week half time or 15 week full time internship in local, state, or federal government. Throughout the internship year students work closely with an advisor on the preparation of a thesis. Each student must select a thesis committee of three persons to be approved by the Program Director. At least two members of the committee must be from the three participating departments (Sociology, Economics and Political Science), one of whom must be the chairperson. Selection of a thesis committee will normally occur during the first year of academic work. Students must also meet the requirement in basic research methods and data analysis, as indicated below under Plan II.

Plan II (comprehensive examination). At least 36 units, 18 of which must be in graduate level courses, are required. Requirements:

1. A competency in microeconomic theory at the intermediate level, fulfilled by taking Economics 100AB or the equivalent.
2. A competency in basic social scientific research methods, data analysis and statistics, fulfilled by Sociology 206 or Political Science 104/204 for social scientific research methods and basic computer skills, and by Math 33 or 133AB for statistics.
3. Coursework in at least two of the fields below. The normal expectation is at least three courses in each field. Reading courses (596) are acceptable if the regular courses are not offered.
4. An oral comprehensive examination, of approximately two hours in length. Three faculty members will serve on the examination committees.
5. An internship, the same as under Plan I. Credit for the internship (8 units) is given upon the completion of a substantial report, of 30 to 50 pages in length, on the internship or an associated public policy problem.

Students normally take courses from this listing, although other courses may be substituted, depending on individual student needs. Courses are grouped by interest areas.

Society and Social Problems

Soc 222 • Social Stratification

Soc 228AB • Selected Problems in American Racism

Soc 230 • Seminar in Social Change

Soc 231 • Seminar in Political Sociology

Soc 232 • Public Opinion and Mass Communication

Pol Sci 252 • Public Opinion and Political Participation

Policy Formulation and Implementation

Pol Sci 215 • The American Governmental Process

Pol Sci 235 • American Public Administration

Pol Sci 253 • Seminar in Political Interest Groups

Pol Sci 254 • Seminar in the Legislative Process

Pol Sci 255 • Seminar in State Government and Politics

Pol Sci 257 • Seminar in Urban Government and Politics

Pol Sci 259 • Seminar in Political Parties

Pol Sci 260 • Seminar in the Judicial Process

Pol Sci 290 • Seminar in the Study of Public Administration

Pol Sci 291 • Seminar in Public Administration and Public Policy

Pol Sci 295 • Seminar in Urban Policy and Administration

Soc 267 • Seminar in Complex Organizations

Econ 120 • Urban and Regional Economics

Econ 130 • Public Finance

Econ 131 • Public Sector Accounting

Econ 220AB • Urban and Regional Economics

Econ 230AB • Public Finance

Policy and Program Evaluation

Econ 100AB • Microeconomic Theory and Policy

Econ 102A • Advanced Topics in Microeconomics

Econ 205ABC • Economic Decisions

Pol Sci 297 • Seminar in the Analysis of Public Policy

Soc 209ABC • Evaluation Research Practicum

Substantive Public Policy Areas
Poverty and Crime

Econ 160 • Economics of Crime and Justice

Econ 165 • Economics of Poverty

Pol Sci 170 • Public Policy Analysis (must be taken as Pol Sci 596, Independent Studies)

Pol Sci 263 • Seminar in the Administration of Justice

Soc 239 • Sociology of Law

Soc 272 • Seminar in Criminology

Population Policy

Pol Sci 258 • Seminar in Politics and Population Policy

Soc 226AB • Seminar in Human Ecology

Natural Resources and the Environment

Econ 115 • Environmental Economics

Econ 122 • Natural Resource Economics

Econ 260AB • Natural Resources

Pol Sci 294 • Seminar in Public Policy and Administration of Natural Resources and the Environment

Education

Soc 264 • Sociology of Education: Seminar

Educ 205 • Comparative Education

Educ 235 • Contemporary Critics & Reform Movements

Educ 236 • "Youth" & Youth Policy in American Education

Educ 237A • Collective Bargaining in Education

239 • School Law

Educ 241AB • Politics of Education

Educ 242AB • Educational Organization

Educ 244 • Organizations and Interpersonal Relationships

Educ 245A • Educational Finance

Labor

Econ 150 • Labor Economics

Econ 250AB • Labor Economics

Educ 237A • Collective Bargaining in Education

Pol Sci 253 • Seminar in Political Interest Groups

Public and Social Affairs

PSA 299AB • Internship

PSA 594 • Special Topics

PSA 595 • Group Studies: Practicum

PSA 598 • Master's Thesis Research and Preparation

Religious Studies

Professors

Walter H. Capps, Ph.D., *Yale University; religion in Western culture.*

W. Richard Comstock, Ph.D., *Union Theological Seminary; modern religious thought (Chairperson).*

Phillip E. Hammond, Ph.D., *Columbia University; Sociology of Religion.*

Gerald J. Larson, Ph.D., *Columbia University; Sanskrit; philosophy and history of religions (India).*

^{1,2,3}Robert S. Michaelsen, Ph.D., *Yale University; religion in America.*

Raimundo Panikkar, Ph.D., & D.Sc., *(Madrid); Th.D. (Rome); comparative philosophy of religion; history of religions.*

^{1,2,3}Birger A. Pearson, Ph.D., *Harvard University; Christian origins; Hellenistic religions.*

¹Ninian R. Smart, B.Phil., *Oxford University; philosophy of religion, comparative religion.*

Associate Professors

Wilbur M. Fridell, Ph.D., *UC Berkeley; history of religions (East Asia).*

Robert M. Gimello, Ph. D. *Columbia University; Chinese and Buddhist Studies.*

Charles Wendell, Ph.D., *UC Los Angeles; Arabic, Islam.*

Assistant Professors

^{2,3}Richard Hecht, Ph.D., *UC Los Angeles; Judaic studies; history of religions.*

Ines Talamantez, Ph.D., *UC San Diego; Native American Religions.*

Adjunct Lecturer

M. Gerald Bradford, Ph.D., *UC Santa Barbara; Western religious thought.*

Visiting Lecturers

Nandini Iyer, M.A., *Oxford; Sanskrit; Philosophy; History of Religions (India)*

Robert McCutchan, Ph.D.; *Princeton; American Religious Studies (Fall Only)*

Professor Emeritus

D. Mackenzie Brown, Ph.D., *Stanford University.*

¹On Leave Fall 1979

²Absent on Leave, Winter 1980

³Absent on Leave, Spring 1980

Concerns of the department

The courses in Religious Studies are designed to provide students with the intellectual tools and scholarly background required for a critical understanding of the forms and traditions of religion that have appeared in human culture. The religious phenomena of preliterate cultures and of both Eastern and Western civilizations are analyzed.

The department recommends that the following courses would provide useful background for the major in Religious Studies: four units from History 46, 86, 88, 90; eight units from History 4A—B—C; four units from Art 6A—F; Philosophy 20A. Study of a foreign language is also advisable for prospective majors. The student is urged to consult with an adviser in order to choose the language which will be most useful, especially if interested in pursuing advanced study.

Departmental advising and publications

There are many sources of information and academic advising within the Religious Studies Department. One of the faculty acts as general Undergraduate Adviser and an-

swers specific questions about the major, transfer credits, course substitutions and/or waivers, and other problems dealing with the student's academic career.

In addition to the general adviser, students are encouraged to become acquainted with the Department Chairperson and the other faculty, and to consult with them about their program or academic plans for the future. Names of the faculty and their specializations and office hours are available in the Main Office of the Religious Studies Department, South Hall, Room 4607.

The Department also provides an information sheet for undergraduate Religious Studies majors and a listing of courses to be offered each quarter, with specific descriptions and required texts.

A complete academic file is kept in the Department Office for each student in the Religious Studies major. There is also available an up-to-date major requirement list and other handouts pertaining to the Religious Studies major.

Bachelor of Arts

Preparation for the major

Students shall consult with their departmental adviser concerning their programs.

Required: Any lower division course in Religious Studies.

Recommended: 8 units from History 4A—B—C; 4 units from History 46, 86, 88 or 90; 4 units from Art 6A—F; Philosophy 20A; foreign language.

Upper Division major

44 units of upper division courses, of which a maximum of twelve from cognate courses in other departments may be selected (in consultation with the major's adviser). In addition, because Religious Studies is interdisciplinary, students in other majors are encouraged to consider a double major. Eight units may be applied simultaneously in both upper division majors.

The Religious Studies upper division major must include the following specific requirements:

A. Western Religious Studies *Eight units from:* 100, 101, 102A,B,C, 103, 104, 107, 109, 112, 115A,B, 116A,B, 126, 130, 131A,B,C,D,E,F, 134A,B, 138A,B,C, 139, 140A,B,C, 142A,B,C, 144, 145, 148, 149, 151A,B, 152, 174, 175A,B, 180, 182, 183, 187, 188.

B. Asian Religious Studies *Eight units from:* 146, 158, 159A,B,C,D,E,F,G,H,J,K,L (no more than 8 units of 159 series will count toward the major), 160, 161A,B, 162A,B, 163A, 164A,B,C, 165, 166A,B,C,D,E,F,G,H, 167A,B,C, 169.

C. Religion and Culture *Eight units from:* 105, 108, 110A,B,D, 112, 113, 114A,B,C,D, 120, 124, 131F, 133, 141A,B,C, 145, 146, 147, 149, 150, 151A,B, 152, 155, 156C, 166A,B,C,D,E,F,G,H, 167A,B,C, 168, 172, 173, 175A,B, 176, 177, 182, 183, 185.

D. Four Units of Religious Studies 197. Senior Seminar

No more than eight units from the 159 sequence may be applied toward the total units required for the major. *Note:* The same course units may not be used to fulfill the requirements in two different areas from A, B, and above.

The Graduate Programs in Religious Studies.

Applications will be accepted for admission in the Fall Quarter of each year, but not in the Winter Quarter. Spring applications are not encouraged. There is no deadline for the receipt of applications in Religious Studies, but it is recommended that they be submitted by February 1.

Applicants are generally not admitted directly into the Ph.D. program. Therefore a student interested in the doctorate is advised to apply for the M.A. and Ph.D. in Religious Studies with the understanding that advancement into the doctoral program is dependent upon successful completion of the M.A. and an evaluation by the department.

Master of Arts

The Department of Religious Studies regards its M.A. degree program as a general rather than a specialized program. It is designed for those interested in primary and secondary school teaching as well as for those interested in nonspecialized graduate work in Religious Studies and may also serve as a foundation for the more advanced and specialized work done in Ph.D. programs in Religious Studies.

Admission. In addition to fulfilling the general requirements for admission to graduate status (see the Graduate Division Announcement), the Department requires an acceptable level of performance on the Aptitude Test of the Graduate Record Examination. Applicants are urged to take this test at their earliest convenience and to have the results forwarded to the Graduate Division.

Undergraduate Preparation. Students who do not have an undergraduate concentration in religious studies will be required to make up deficiencies by taking relevant undergraduate courses at UCSB.

Foreign Language. All prospective graduate students are urged to acquire proficiency in French and German before entering the program. The minimal requirements, however are as follows: A reading competence in French or German must be demonstrated before the student may enroll for a fourth quarter in the department and before he or she may take a comprehensive written examination or submit a thesis. No student will be permitted to register for regular courses in Religious Studies for the fourth quarter who has not fulfilled this requirement.

Background in Western Thought. Competence in the sources and history of western thought is required by way of preparation for all students.

Concentration on Specific Traditions and Disciplines.

Students will focus on (a) the sources and history of two major religious traditions, one of which may include some aspect of the European-American tradition; and (b) the various approaches and methodologies used in the scholarly study of religion. The selection of special areas within the various traditions will be determined by the student's own interests as well as by the competence of the faculty in Religious Studies and UCSB's cognate resources.

Written, Preliminary Examination. All graduate students enrolled in 200A and 200B during a given academic year will be required to take the preliminary examination at the conclusion of 200B.

Written, Comprehensive Examination or M.A. Thesis. Upon satisfactory completion of the preliminary examination, a graduate student will then have the option to pursue either the study of two traditions (or one tradition and one discipline) leading to a comprehensive examination or to the preparation of an M.A. thesis under the direction of a three-member faculty committee chosen by the Department.

The reading lists for the comprehensive examination are available on request from the Department of Religious Studies.

Students who intend to apply for admission in the Ph.D. program should be advised that while the M.A. thesis is sufficient to warrant consideration for admission to doctoral study, it is not an adequate substitute for the comprehensive examination requirement on the doctoral level. Therefore, all M.A. students following the thesis option and also desiring to pursue doctoral study, if admitted to the doctoral program, will have to pass a comprehensive examination at a sufficiently high level to warrant continuation of doctoral-level study, in addition to having written an acceptable M.A. thesis.

Doctor of Philosophy

The Department of Religious Studies of the University of California, Santa Barbara, offers a program leading to the Ph.D. degree. This program is designated Cross-Cultural and Interdisciplinary Studies in Religion. Although each doctoral student receives training in both cross-cultural and interdisciplinary studies, each doctoral student is also encouraged in his or her advanced work to pursue a special focus in one or the other of these areas.

Cross-cultural studies in religious traditions

This area of the program is concerned with the comparative study of religious traditions of eastern and western cultures. These geographical designations are limited by the faculty resources of UCSB. "Eastern" refers largely to certain aspects of South Asian and East Asian religion. "Western" refers to certain aspects of Mediterranean, European and American religion. The purpose is to train scholars in Religious Studies who are equipped to deal critically and creatively with issues relating to religious experience and ideas in more than one cultural context. The intention, in other words, is not to train specialists in one area — e.g., Indologists, Near Eastern scholars, etc. — but, rather to develop the student's capacity for comparative analysis and reflection in several religious traditions so that the student is prepared to deal with issues arising out of the contemporary intermingling of cultural and religious traditions. Doctoral students pursuing advanced work in this area will take courses and seminars which emphasize (1) the study of religious texts and other source materials, requiring philological competence; (2) the study of methodology and hermeneutics; (3) comparative phenomenological, philosophical and theological investigation.

Interdisciplinary studies in religion and the humanities

This area of the program concentrates on the relation of

religion to the Humanistic traditions of thought and expression in both their classical and contemporary forms. It focuses on the development of language skills, interpretation of texts, the appreciation of the visual arts, film, music. Emphasis is placed on how forms of expression-myth, logical discourse, poetry-effect content. Flexibility is encouraged in dealing with problems and themes that lie at the boundaries between traditional fields. Students are expected to do advanced work in one of the traditional disciplines-literature, history and theory of art, philosophy, sociology- in addition to preparing themselves in the history of western thought and in a general approach to the theory and history of religion.

General requirements for the Ph.D. program

Admission. The Ph.D. program is limited to a relatively small number of students, and the Department generally does not admit applicants directly into the doctoral program. Therefore a student who does not already hold an M.A. in Religious Studies or some closely related field is advised to apply for the M.A. with the understanding that advancement into the doctoral program is dependent upon both the successful completion of that M.A. and an evaluation by the Department. In addition to fulfilling the general requirements for admission to graduate status, the Department requires an acceptable level of performance on the Aptitude Test of the Graduate Record Examination. Applicants are urged to take this test at their earliest convenience and to have the results forwarded to the Graduate Division.

Foreign Language. Reading competence in French or German must be demonstrated before the student may enroll for a fourth quarter in the Department and before he or she may take a comprehensive written examination. Reading competence in the second required language (French or German) must be demonstrated before taking the oral qualifying examination. In certain limited cases, another modern language can be substituted for either French or German, if the student's academic program warrants it. Competence in certain classical or ancient languages may also be required, depending upon the student's program of study.

Background in Western Thought. Competence in the sources and history of western thought is required by way of preparation for all students.

Required Course Load and Program of Study. Students directly admitted into the doctoral program without the M.A. or its equivalent are required to take 36 units of advanced work (18 of which must be in graduate courses in addition to the required courses). Required of all graduate students are 4 units in Religious Studies 200A, Proseminar in History and Theory of Religion and 4 units in Religious Studies 200B (a continuation of 200A) which will include the preparation of a methodological paper. Competence in the sources and history of western religious thought is required of all graduate students in Religious Studies. Selection of other courses is to be worked out by the student in consultation with his adviser.

Written, Preliminary Examination. All graduate students enrolled in 200A and 200B during a given academic year will be required to take the preliminary examination

at the conclusion of 200B. Any student who has already taken these courses and passed this examination as part of his or her M.A. program in the Department will thereby have satisfied this requirement.

Written, Comprehensive Examination. Completion of a comprehensive examination at a sufficiently high level to warrant continuation of doctoral-level study. Any student who has already passed a comprehensive written examination as part of his or her M.A. program in the Department will thereby have satisfied this requirement.

Oral Qualifying Examination and Admission to Candidacy. After passing the written comprehensive examination the student will be placed under the supervision of a doctoral committee selected by the Departmental Graduate Instruction Committee in consultation with the student and his or her advisers. The constitution of this doctoral committee will be subject to the approval of the whole faculty of the Department and approved by the Graduate Dean. The student shall present to this committee a dissertation proposal in which both the subject of his research as well as the specific field-discipline to which that research will be correlated are clearly set forth and on which the student will be examined orally. Upon successful completion of the oral qualifying examination, the student will be admitted to candidacy.

Doctoral Dissertation. The candidate must write a dissertation under the supervision of the doctoral committee demonstrating an ability to do significant research and scholarly analysis and to present findings and conclusions with precision and clarity. The dissertation normally must be completed within five years after passing the qualifying examination and must be formally defended.

Residence Requirement. Minimum residence requirements for the Ph.D. degree are discussed in the Graduate Division Announcement.

Teaching Experience. All doctoral students are required to serve as Teaching Assistants some time during their residence in the Ph.D. program. Applicants for Teach-

ing Assistantships should be filed as early as possible.

Language Resources. The language courses offered in the Department are not duplications of any offered in the regular language departments on campus. They are oriented toward the acquisition of research skills in the Classical languages which are the vehicles of the several religious traditions taught in the Department. The Department offers courses in the following languages and/or religious literatures as part of its program: Chinese, Coptic, Greek, Hebrew, Japanese, Latin, Pāli, Persian and Sanskrit.

Career opportunities

The Bachelor of Arts degree in Religious Studies provides an excellent foundation for graduate work in the humanities, certain areas within the social sciences, and in training for the professions. Majors in Religious Studies from UCSB have gone on to careers in medicine, law, teaching, the ministry, social work, communications, counseling, business, and a wide variety of other fields. M.A. and Ph.D. candidates are trained primarily for careers in teaching and research, with an openness to other professional opportunities.

Teaching credentials

Students who complete a major in Religious Studies may be eligible to pursue a California teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180 Phelps Hall.

Correspondence information

Chairman of the Graduate Committee, Department of Religious Studies, South Hall 4607, University of California, Santa Barbara, California 93106. Phone: (8-05) 961-3578.

Religious Studies

Lower Division courses

1 • Introduction to the Study of Religion (4) Staff [D]

A consideration of major themes, issues, types of figures and phenomena, and traditions—all selected from the history of religion so as to illustrate the great variety of religious phenomena and to suggest some of the ways such things may be responsibly studied.

3 • Introduction to Asian Religion (4) Staff [D]

A multi-media exploration of basic themes in Asian Religion.

5 • Introduction to Western Religion (4) Staff [D]

An introductory survey of basic themes in the religious traditions of Judaism, Christianity, and Islam.

25 • Dimensions of Christianity (4) Smart [D]

In some ways Christianity is the least understood of the world's religions, perhaps because those who study it are either too close to it, too alienated or too specialized. This course places Christianity in its plural and multidimensional context and uses the methods of the history of religions to examine it.

40 • Religion and Society (4) Staff [D]

The relationship of religious concepts and values to contemporary problems of individual behavior, political responsibility and international order.

50 • Religious Classics of the Western World (4) Capps [D]

A multi-media course, focusing on textual, architectural, pictorial and conceptual classics, such as St. Augustine's *The Confessions*, the Chartres Cathedral, Botticelli's "The Virgin" and medieval scholasticism, as indices of the structure, content, and formation of western culture.

Upper Division courses

Please note that the letter suffixes

attached to the numbers of many of the upper division courses do not necessarily indicate a prerequisite sequence.

100 • From Augustine to Luther (4) Capps [D]

Study of the major themes, figures, patterns of thought, and artistic styles of medieval and early reformation Christianity.

101 • A Survey of Western Religious Thought (4) Comstock [D]

A survey of leading problems in Greek philosophy, Medieval Theology and modern philosophy of religion that have special bearing on the questions of the nature and concerns of religion. Recommended by the department for all M.A. and Ph.D. candidates in Religious Studies.

102A • Luther to Kant (4) Comstock [D]

A study of the religious and theological issues involved in the reformation with particular reference to the writings of Luther and Calvin. The later development of Christian thought through the seventeenth centuries to Kant is traced.

102B • Nineteenth Century Religious Thought (4) Comstock [D]

A survey of important religious themes as they have appeared in such representative thinkers of the nineteenth century as Hegel, Schleiermacher, Kierkegaard, Feuerbach, and Nietzsche.

102C • Twentieth Century Western Religious Thought (4) Comstock [D]

An examination of leading figures in Western religious traditions who have been important influences in the fields of theology and philosophy of religion.

103 • Religion Today (4) Capps [D]

A survey of the growth and development of twentieth century religious thought and its historical background. Course may be repeated up to eight units.

104 • Survey of Christian Theology (4) Comstock [D]

A survey of the main doctrines and theological controversies that have emerged in the Christian church in the Patristic, medieval, and modern periods. The course is especially designed for students preparing for the comprehensive examinations in the M.A. program, but it is open to all students.

105 • Religion and Liberation (4) Panikkar [D]

An examination of various theological and philosophical movements currently concerned with the liberation of man.

106 • The Scope of Christian Theology (4) Comstock [D]

A survey of doctrines of the Christian church from the time of the church fathers to the present. The Trinity, incarnation, Christology, atonement, and eschatology are studied through an examination of the writings of major theologians.

107 • Dynamics of Modern Ecumenism (4) Staff [D]

A survey of the various movements toward Christian unity during the last 70 years, with emphasis on the social and cultural factors favoring or hindering the process of convergence.

108 • Comparative Ethics (4) Smart [D]

An analysis of the way in which religious traditions inform value-systems. Comparative study of some ethical systems.

109 • Varieties of Christianity (4) Smart [D]

Prerequisite: RS 25 or permission of instructor.
This course examines selected varieties of Christianity, such as Roman Catholicism, Mennonites, Orthodoxy, Anabaptism, Anglicanism and modern sects. It thus brings out the pluralism of the tradition. Is Christianity indeed really a single religion?

110A • Religion and Literature (4) Comstock [D]

An examination of the interaction between religion and literature through the study of literary works. Figures like John Milton, William Blake, and T.S. Eliot are among those to be considered.

110B • Literature and Visionary Experience (4) Comstock [D]

A study of religious experience—visions, mystical insights, etc. through works of literature in which such experiences play a major role.

110D • Ritual Art and Drama of the Pacific Northwest (4) Talamantez [D]

Religious ethos of selected peoples of the Pacific Northwest as it is expressed in masking, costume, body paint, art, and architecture. Study of mythology, ritual and symbolism, contemporary developments.

112 • Religious Approaches to Death (4) Comstock [D]

An examination of traditional and modern works dealing with the art of dying and death. Current discussions amongst sociologists and psychologists as well as significant literary works are related to materials on death in religious traditions like Christianity and Buddhism.

113 • Religion and Film (4) Comstock [D]

An examination of religious themes and forms as they appear in significant works of modern film. The nature of man, the problem of suffering, the quest for meaning are among the topics considered. Attention is paid to such questions of form as the presence of "myth" in film and the methods—like structural analysis—which can be used in their study.

114A • Introduction to Native American Religious Studies (4) Talamantez

This course is designed as an introduction to the contribution that Native American religions make to the general study of religion. Metaphysical and philosophical aspects of North American Native culture. Major concepts of belief systems, religion and medicine. Theories of balance, harmony, knowledge, power, ritual and ceremony.

114B • Religious Traditions of the Southwest (4) Talamantez

Survey of the cultures of the southwestern United States to discern the place of religion in the life of Athabaskan, Pueblo, Uto-Aztec, and Native peoples of California. Consideration of the relationships between social structure, environment, and history as they effect religious behavior. Brief overview of the Native American church, folk Catholicism, curanderismo and espiritismo.

114C • Myths, Symbols, and Transitions in Native American Religions (4) Talamantez [D]

An exploration of the nature, structure and meaning of ritual act and ritual language in the religious life of Native cultures of the Southwest. Intensive study of selected ritual oratory with particular attention to myth and symbol. The relevance of linguistic models for interpreting ritual. Approaches to symbolism including the interrelations between different media (oral, aural, tactile plastic), and to features of formalism, redundancy, and condensation in ritual. Examination of a select number of monographs.

114D • Religion and Healing in Native America (4) Talamantez [D]

An interdisciplinary and comparative study of representative Native American cultures and their religio-medico systems. Emphasis on understanding the experimentation, evaluation, and sacralization of the biosphere in culture to

meet human physical and spiritual needs. Examination of the special place of language in well-being. Attention will be given to changes which are a result of contact with European culture.

115A • Literature and Religion of the Hebrew Bible (4) Hecht [D]

Introduction to the varieties of literature, traditions and institutions of ancient Israel through the prophetic period.

115B • The Prophets (4) Hecht [D]

The origins, development and enduring significance of the prophetic movement in ancient Israel.

116A • Christian Beginnings (4) Pearson [D]

Study of the varieties of early Christian traditions and literature of the first century, with special (but not exclusive) attention to the New Testament.

116B • Second-century Christianity (4) Pearson [D]

Prerequisite: RS 116A or equivalent.

Study of the various religious trends in developing Christianity as represented in the writings of the early Fathers, the later books of the New Testament, the New Testament apocrypha, and "heretical" movements.

120 • Religion, Ideology and An Emerging World Culture (4) Smart [D]

Traditional religions especially Christianity and Buddhism in interplay with secular ideologies (such as Marxism, liberal humanism, nationalism) with a view to investigating the patterns of unity developing in the various cultures of the world.

124 • The Christological Problem in the Light of Comparative Religion (4) Panikkar [D]

The nature and function of Christ in the perspective of Religious Studies. Christophany between Hierophany and Theophany. A study of the main Christological problems in the light of the history of Religions.

126 • Roman Catholicism in Modern Times (4) Staff [D]

An analysis of the structure and functioning of the Roman Catholic Church, seen in the context of its historical situation. Contemporary situations and problems will be given emphasis but relevant background from the post-Tridentine period and especially the last century and a half will be considered.

130 • Judaism (4) Hecht [D]

A study of basic structures and motifs (e.g., the Law, the Festivals, the Holy Land) within the history of post-Biblical Judaism.

131A • Palestinian Judaism from Ezra to Akiba (4) Hecht [D]

Prerequisite: RS 115A or equivalent.

Study of the various religious trends in Palestine from the time of Ezra to the second revolt, with special attention to the rise and development of the apocalyptic.

131B • Judaism in the Graeco/Roman World (4) Hecht [D]

Prerequisite: RS 115A or equivalent.

Study of the cultural and religious interactions

of Judaism with Hellenism among the Greek-speaking Jews of the Diaspora. Special attention will be given to the writings of Philo of Alexandria.

131C • Judaism in the Medieval World (4) Hecht [D]

Course covers period from 650-1150 CE and topics: Karaite movements; biblical and talmudic commentaries; growth of mysticism and mystical movements; disputations between Christians and Jews.

131D • Judaism in Modern Times (4) Hecht [D]

Prerequisite: Background in study of Judaism, or consent of instructor.

Challenge of the Enlightenment and Emancipation movements to traditional Jewish life in Western and Eastern Europe. Religious and secular responses to these challenges (Orthodox, Conservative, Reform, Zionism, Socialism) in Europe and the United States.

131E • Contemporary Trends in Judaism (4) Hecht [D]

An examination of the variety of trends in Judaism from the First World War to the present. Major areas of study include the following: the philosophies of Franz Rosenzweig, Martin Buber and Abraham Heschel, the growth of the Conservative and Reform movements in America, the Holocaust, the post-war disorientation and responses to the Holocaust.

131F • The History of Anti-Semitism (4) Hecht [D]

A systematic examination of the history of anti-Semitism, beginning with the emergence of anti-Judaism in the world of late antiquity, its transformation into theological anti-Semitism in the Middle Ages, and the emergence of racial anti-Semitism in the modern world. The central focus will be anti-Semitism as a religio-historical category.

133 • Ancient Egyptian Religion (4) Staff [D]

A study of diverse aspects in Egyptian religion from predynastic times through the New Kingdom. Special attention will be given to religion and culture during the Amarna Period.

134A • Hellenistic Religions: The Hellenistic Period (4) Pearson [D]

Historical and descriptive analysis of selected religious phenomena of the Hellenistic world: ruler cults, Greek cults and mysteries, religious developments in the Hellenized Near Eastern lands and the religious dimensions of Hellenistic philosophy. Emphasis is placed on the study of primary sources.

134B • Hellenistic Religions: The Roman Empire (4) Pearson [D]

Historical and descriptive analysis of selected religious phenomena of the Empire, with special attention to the Oriental mystery religions, astrology, magic, alchemy, Gnosticism and the religious dimensions of philosophy in the Empire (especially neo-Pythagoreanism and neo-Platonism). Emphasis is placed on the study of primary sources.

138A • Religious Literature in Coptic (4) Pearson [D]

Prerequisite: At least one year of Greek.

An introduction to Sahidic-Coptic grammar,

with special reference to the Coptic Gospel of Thomas.

138B • Religious Literature in Coptic (4) Pearson [D]

Prerequisite: RS 138A

Readings from the Gospel of Thomas and the Sahidic New Testament.

138C • Religious Literature in Coptic (4) Pearson [D]

Prerequisite: RS 138A—B, or equivalent.

Readings from selected Subakhmimic Coptic texts.

139 • The New Testament in Greek (4) Pearson [D]

Prerequisites: Greek 50 or permission of instructor.

Reading in the Greek New Testament, with comparative study of related materials from Greek literature of the Hellenistic-Roman period.

140A • Islam: Origins and Sunnite Orthodoxy (4) Wendell [D]

Origins of Islam in 7th century Arabia and the life of the Prophet Muhammad; text and message of the Koran, and the fundamentals of Orthodox Sunnite belief and practice.

140B • Islam: Sectarianism and Mysticism (4) Wendell [D]

The major sectarian (heterodox) divisions within Islam, e.g., the Kharijites, and the Shi'a and its offshoots, and the culture and historical conditions under which they arose; the mystical movement and its embodiment in the Sufi orders.

140C • Islam: Popular Religion and Modern Developments (4) Wendell [D]

The impact of the West and its secular culture on Islam; the rise of new sects in the 18th, 19th and 20th centuries; modern Koran interpretation and the efforts to accommodate Islam to 20th century conditions.

141A • Sociology of Religion: The Classical Statements (4) Hammond [D]

Religion as it is treated by major social theorists, including Marx, Weber, Durkheim, Freud, Simmel, Malinowski.

141B • Sociology of Religion: Religious Organizations in Contemporary Society (4) Hammond [D]

Religion as it appears in formal institutions, including the study of religious beliefs, religious professionals, and the dynamics of religious organizations. Emphasis is on contemporary U.S.

141C • Sociology of Religion: Church and State (4) Hammond [D]

Religion as it exists in the civic realm including the political aspects of churches, the religious aspects of politics and the role of the courts in mediating the relationship of church and state.

142A • Religious Literature in Hebrew (4) Hecht [D]

Prerequisite: One year of Hebrew or consent of instructor.

Introduction to the narrative literature of the Hebrew Bible with special reference to Genesis 1-11. Special attention will be given to the principles of form criticism and the interpretative problems that surround this text.

142B • Religious Literature in Hebrew (4) Hecht [D]

Introduction to poetry of the Hebrew Bible with special reference to cultic songs. Texts will be selected from Psalms, Song of Songs and Koheleth in order to examine the varieties of poetic style.

142C • Religious Literature in Hebrew (4) Hecht [D]

Introduction to Palestinian midrashic literature with special emphasis upon the development of reading skills. Texts to be selected from *Bereshit Rabbah*, *Wayyikra Rabbah* and *Pesikta de-Rav Kahana*.

144 • Introduction to the History of Religions: Ritual (4) Hecht [D]

A religio-historical study of the nature of ritual activity in a variety of religious traditions. Sacrificial rituals from archaic traditions of southeast Asia, Vedic India and the northwestern Semitic World will serve as the specific forms of ritual activity to be examined.

145 • Patterns in Comparative Religion (4) Panikkar [D]

Study of major religious issues as addressed by more than one religious tradition. The problem of comparative religion as an academic discipline.

146 • Problems in Comparative Mysticism (4) Panikkar [D]

Historical and descriptive analysis of selected mystical traditions in South and East Asia, the Middle East, and Europe; and the study of selected key figures—e.g., Chuang Tzu, Shankara, Plotinus, St. John of the Cross, etc.

147 • Myths and Symbols of the Sacred: A Study in Primordial Religiousness (4) Panikkar [D]

Survey of myths and symbols in the primordial religions of Africa, Asia, and the West, in the light of various theories proposed in the discipline of Religious Studies.

148 • Religion and Atheism (4) Panikkar [D]

An analysis of Buddhist, Christian and Modern Atheism in the light of comparative religion. The place of God in religion and the nature of non-theistic religiousness.

149 • The Meaning of Time in Religion from Tradition to Modernity (4) Panikkar [D]

An examination of the concept of time from Eastern and Western religious perspectives. A phenomenological study focussing on pertinent philosophical approaches to the problem of time, concluding with some cross-cultural reflections.

150 • Hindu and Christian Ethics: Dharma vis-a-vis Righteousness (4) Staff [D]

A comparative study of the basic value systems of Hinduism and Christianity emphasizing the cross-cultural features of the East and the West for the development of an integral view of human life.

151A • Religion in American History (4) Michaelsen [D]

Principal figures, groups, trends and issues in religion in America to 1865.

151B • Religion in American History (4) Michaelsen [D]

Principal figures, groups, trends and issues in religion in America since 1865.

152 • Religion in America Today (4) Michael-
sen [D]

Recent trends in American religion and in interrelationships between religion and American society

155 • Religion and the Impact of Vietnam (4) Capps [D]

Impact of the Vietnam war upon American values, religion, and sense of national purpose. Portrayals of the way through literature, film speeches, music, television, narrations of veterans, reports of war correspondents, et al. Interpretations of "the meaning of the war" in light of American experience and the social changes of the 60s and 70s.

156A • Anthropology of Religion (4) Staff [D]

Religion as a cultural phenomenon; the nature of religious experience among preliterate peoples; influence of social structure on the development of myth and ritual; comparison between various scientific methods in the study of religion.

156C • Psychology of Religion (4) Staff [D]

Religion as an individual phenomenon; religious influence on the structure and dynamics of personality; comparison between various approaches to the study of religion in psychology.

157A • Religious Literature in Persian (4) Wendell [D]

Prerequisite: Limited to Religious Studies majors, or consent of instructor.
An introduction to the phonology, morphology and syntax of Classical Persian.

157B • Religious Literature in Persian (4) Wendell [D]

Prerequisite: RS 157A Limited to religious Studies majors, or consent of instructor.
Selected readings from Classical Persian Religious texts.

157C • Religious Literature in Persian (4) Wendell [D]

Prerequisite: RS 157B. Limited to Religious Studies majors, or consent of instructor.
Selected readings from Classical Persian religious texts.

157D—E—F • Religious Literature in Persian (4) Wendell [D]

Selected readings from classical Persian religious texts.

158 • Religion and Hindu Iconography (4) Staff [D]

A study of the major themes of South Asian religion, mythology and ritual through the medium of iconography. Analysis and interpretation of the major gods and goddesses of South Asia and the manner in which the historian of religions may utilize art historical materials.

159A • Religious Literature in Sanskrit (4) Larson [D]

An introduction to the phonology, morphology and syntax of classical Sanskrit.

159B • Religious Literature in Sanskrit (4) Larson [D]

Prerequisite: RS 159A.

Readings from the *Mahabharata* and *Hitopadesa*.

159C • Religious Literature in Sanskrit (4) Larson [D]

Prerequisite: RS 159A—B.

Readings from the *Mahabharata* and *Hitopadesa*

159D—E—F • Religious Literature in Sanskrit (4-4-4) Larson [D]

Prerequisite: RS 159A—B—C, or equivalent.

Courses need not be taken in sequence. Reading and analysis of classical Sanskrit religious texts.

159D • Bhagavad Gita

159E • Samkhyakarika

159F • Yogasutra

159G—H—I • Religious Literature in Sanskrit (4-4-4) Larson [D]

Prerequisite: RS 159A—B—C, or equivalent.

Courses need not be taken in sequence. Reading and analysis of classical Sanskrit religious texts.

159G • Nāgārjuna's Kārikā-s

159H • Purāna-s

159I • Guadapāda's Kārikā-s

159J—K—L • Religious Literature in Sanskrit (4-4-4) Larson [D]

Prerequisite: RS 159A—B—C, or equivalent.

Courses need not be taken in sequence. Reading and analysis of classical Sanskrit religious texts.

159J • Chandogya Upanishad

159K • Katha, Svetasvatara and Mandukya Upanishads

159L • Selected Bhasyas of Shankara

160 • Religious Systems of India (4) Larson [D]

Analysis of Vedic-Upanishadic-Epic traditions: Jainism and Indian Buddhism; six orthodox systems; Vaisnavism, Saivism and the Hindu Tantra.

161A • Yoga Traditions of India (4) Larson [D]

Religio-historical analysis of classical Samkhya and Yoga, Jain and Buddhist Yoga and Tantric Yoga. Study of the role and function of meditation in Indian religion.

161B • Buddhist Meditation Traditions (4) Gimello [D]

A consideration of major forms of Buddhist meditation, from both the South Asian and the East Asian traditions, with special attention given to determining the nature of meditation as a variety of religious experience.

162A • Indian Philosophy and Religion (4) Smart [D]

The course examines the degree to which representative metaphysical systems reflect religious interests and experiences—systems such as those of Nagarjuna, Shankara, Ramanuja and Madhva.

162B • Seminar on Shankara and Nagarjuna (4) Larson [D]

Prerequisite: RS 160 or 161 or consent of instructor.

Historical, thematic and comparative analyses of Advaita Vedanta and Madhyamika Buddhism.

163A • Aum in the Upanishads (4) Panikkar [D]

A study of the meaning of the sacred sound in the Mandukya Upanishad and its importance for contemporary philosophy of language.

164A • The Buddhist Tradition (4) Larson [D]

Origin and development of Buddhist tradition in India and South Asia.

164B • The Buddhist Tradition (4) Gimello [D]

Prerequisite: Background in Indian Buddhism, or consent of instructor.

Evolution of the Buddhist tradition in China. A consideration of the Buddhist tradition in China, with emphasis on the changes which Buddhism underwent in its encounter with Chinese traditions and historical circumstances.

164C • Japanese Buddhist Founders and Movements (4) Fridell [D]

Prerequisite: Not necessary to have taken 164A or B. However, knowledge of Buddhist fundamentals required, or consent of instructor.

Life and thought of founders of selected Japanese Buddhist sects and schools, such as Pure Land, Nichiren and Zen.

165 • The Upanishadic Tradition of India (4) Panikkar [D]

Analysis and interpretation of the philosophical implications of selected Upanishads—primal myths, the doctrine of the Self, the mahavakyani, etc.

166A • Religion in Chinese Culture • (4) Gimello [D]

A survey of major periods and themes in the history of the Confucian, Taoist, and Chinese Buddhist traditions, with particular emphasis on the differences and tensions among them and on the contributions of each to the formation of the Chinese Civilization.

166B • Taoist Traditions of China • (4) Gimello [D]

A study of the classical literary sources of Taoism, followed by a consideration of the varieties of religious practice which developed from those sources.

166C • Confucian Traditions: The Classical Period (4) Gimello [D]

A treatment of the origins of Confucianism and of its development through the Han dynasty (to 200 A.D.), with special attention to the variety of humane and spiritual disciplines which came to be called "Confucian." Emphasis will be placed on the interpretation of primary texts like the *Analects*, the *Mencius*, the *Hsun Tzu*, etc.

166D • Confucian Traditions: “Neo-Confucianism” (4) Gimello [D]

A study of the later history of Confucianism, beginning with its post-Buddhist revival in the ninth and tenth centuries A.D. and continuing into modern times. Special attention will be given to the ways in which the varieties of “neo-confucianism” incorporate elements not only of classical Confucianism but also of Taoism and Buddhism.

166E • The Flowering of Chinese Buddhism (4) Gimello [D]

A study of the distinctively Chinese forms of Buddhism which emerged in the sixth and seventh centuries A.D. Emphasis will be on the Hua-Yen, T’ien-t’ai, and Ch’an traditions, and on the features of those traditions which distinguish them most clearly from Indian Buddhism.

166F • Religious Literature in Chinese: Buddhist Texts (4) Gimello [D]

Prerequisite: 1 year formal study of classical Chinese.

Selected readings in important Buddhist texts which were either originally written in Chinese or translated into that language. Only texts not available in Western language translation will be chosen. Attention will be given not only to the content of the texts read, but also to the grammatical, syntactical, and terminological peculiarities of Buddhist Chinese.

166G • Religious Literature in Chinese: Confucian Texts (4) Gimello [D]

Prerequisite: 1 year formal study of classical Chinese.

Readings in selected texts from the classical Confucian tradition (Chou dynasty), Han dynasty Confucianism, and the Neo-Confucian traditions of the Sung and Ming dynasties.

166H • Religious Literature in Chinese: Taoist Texts (4) Gimello [D]

Prerequisite: 1 year formal study of classical Chinese.

Readings in the *Lao Tzu* (*Tao-te-ching*) and the *Chuang Tzu* and their latter commentaries.

167A • Religion in Japanese Culture (4) Fridell [D]

Prerequisite: Background in Buddhism, or consent of instructor.

Pre-history to 1600. The development of Shinto, as well as Japanese forms of Confucianism, Taoism and Buddhism. Emphasis on medieval Buddhist sects, Pure Land, Zen, Nichiren.

167B • Religion in Japanese Culture (4) Fridell [D]

Prerequisite: RS 167A, or equivalent.

1600—present day. Emphasis on religion and sacred values of the last century, especially pre-war “familism” and State Shinto, the “new religions” and the overall postwar scene.

167C • Japanese New Religions (4) Fridell [D]

Emergence of new religions as Japan moves into an uncertain modern age; focus on Nichiren Shoshu, Tenrikyo, and Perfect Liberty Kyodan.

168 • Nature: East Asian Views (4) Fridell [D]

Elements of an environmental worldview, with attention to Chuang Tzu, Chinese painting, Shinto, Japanese folklore, Buddhist Mahayana philosophy and Zen.

169 • Zen (4) Fridell [D]

A general introduction to Zen as it has developed in Asia and more recently in the West, with careful examination of Zen practice and enlightenment experiences. Attention to such special dimensions as Zen and Science, Zen and the Arts, and Zen in America.

172 • Religion and Science (4) Staff [D]

The impact of Western science on religion; the compatibility and complementarity of their discourses. The implications for religion of contemporary scientific theories concerning man and the universe in which he lives.

173 • Religious Myth and Language (4) Panikkar [D]

A survey of contemporary studies about the nature and function of religious symbol and language.

174 • Religious Thought and Existentialism (4) Comstock [D]

An examination of the Nineteenth and Twentieth Century literary and philosophical movement of existentialism and its implications for philosophy of religion and theology. Typical figures like Kierkegaard, Sartre, Camus, Buber are examined.

175A • Pragmatism, Empiricism and Religion (4) Comstock [D]

A survey of important religious positions that have been based on an experiential and pragmatic orientation. Representative thinkers like W. James, J. Royce, G. Santayana, J. Dewey and A. N. Whitehead are examined.

175B • Religious Dimensions of German Idealism (4) Comstock [D]

An examination of the religious ideas and figures like Kant, Fichte, Schelling, and Hegel. Their influence on thinkers as diverse as Kierkegaard, Marx, Nietzsche and Tillich is considered.

176 • Religion and Modern Ideologies (4) Staff [D]

The conflicts and accommodations between the historic religious systems—Hinduism, Buddhism, Judaism, Christianity and Islam—and modern nationalism, communism and fascism.

177 • The Religious Personality (4) Capps [D]

Study of the cultural influence and personal characteristics of religious men as reflected in their diaries, journals, and autobiographical writings.

180 • Problems in the Philosophy of Religion (4) Panikkar [D]

A study of the religious dimension of philosophy and the philosophical aspect of religion. Relationship between religion and philosophy cross-culturally examined.

182 • Ethics of the Life Cycle (4) Michaelsen [D]

A study of contrasting models of the life cycle; rites of passage; moral problems associated with birth, growth, sex, work, leisure, aging and death.

183 • Psychoanalytic Interpretations of Religion (4) Capps [D]

Treatment of Religion in Freud, Jung, and contemporary writers such as Erickson, Norman O. Brown and Robert Lifton.

185 • Religion and Social Structure, East and West (4) Staff [D]

East and West is understood in terms of religious tradition, the boundary lying approximately on the Eastern escarpments of the Iranian plateau. The focus is on the image and understanding of man's position in society and in the universe as designed individual religions or philosophies which eventually assumed a role of religion or become a substitute for it.

187 • The Monastic Impulse (4) Capps [D]

The religion of the hermitage and cloister from St. Anthony and St. Benedict. Special attention to current revivals of asceticism, western yoga traditions, east-west exchanges and the writings of Thomas Merton.

188 • Western Mysticism (4) Capps [D]

Study of western mystical religion from Bernard of Clairvaux, Eckhart, St. John of the Cross, St. Teresa, to Pascal, Blake, and the modern era.

194 • Group Studies For Advanced Students (1-4) Staff

Enrollment normally limited to 12 or fewer students.

Topics vary according to instructor. Students may repeat this course, subject to departmental approval, but only 4 units may apply to the major.

197 • Senior Seminar (4) Staff

Prerequisite: Senior standing.

An undergraduate seminar limited to senior religious studies majors. Concentration on method and selected topics in the scholarly study of religion.

***199 • Independent Studies in Religion** (1-5) Staff

199 Courses are limited to no more than five units in one quarter and no more than 12 units total.

* See N-2 for 198/199 independent studies unit limitations.

Graduate courses

200A • Proseminar in History and Theory of Religion (4) Staff

Critical analysis and research in methodological problems related to the study of religion.

200B • Proseminar in History and Theory of Religion (4) Staff

Critical analysis and research in the history of Western religious thought.

202 • Religious Literature in Pali (4) Larson

Prerequisite: RS 159A—B—C or permission of instructor.

Phonology, morphology and syntax of the Pali language with readings of early Buddhist texts from the Pali Canon.

203 • Religious Literature in Tibetan (4) Staff

Prerequisite: RS 159A—B—C or equivalent.

Phonology, morphology and syntax of classical Tibetan with readings from Tibetan Buddhist texts.

204 • Religious Literature in Vedic Sanskrit (4) Larson

Phonology, morphology and syntax of Vedic; and reading of *Rig Veda* I.1, I.32, X.90, X.129 and other hymns.

205 • Religious Literature in Coptic (4) Pearson

Prerequisite: RS 138A—B—C or equivalent.

Study of selected Coptic Religious texts in the Sahidic, Sub-Achmimic, Achmimic, or Bohairic dialects.

206 • Seminar on Indic Religious Studies (4) Larson

Analysis and interpretation of selected research topics in South Asian religion and thought. Attention to research methodology and the use of primary source materials.

219 • Sartre's Critique of Dialectical Reason (4) Larson

A critical analysis of such notions as "history," "totalization," "praxis," and "collectivities" as set forth in Sartre's *Critique of Dialectical Reason* and the implications of that analysis for doing "history of religions."

220 • Bibliography and Research Methods in the Study of Religion (2) Hecht

An advanced study of bibliography and research methods in preparation for doctoral study in the field of religion.

221 • The Formation of Religious Studies (4) Capps

Cross-disciplinary treatment of the origin and composition of religious studies as a distinct subject-field, from Muller, Frazer, Tylor and Durkheim to the present.

222 • Aesthetics of Religion (4) Capps

Analyses of art forms, conceptual models, paradigm formation, visual portrayal, projective techniques; correlations between art and religion.

229 • The Archaeology of Religious Knowledge (4) Gimello

An investigation of the relevance to Religious Studies, particularly to the History of Religions, of the work of the philosopher/historian Michel Foucault.

230 • Seminar in the History and Theory of Religion (4) Staff

Scholarly perspectives and disciplinary approaches to critical study and research in the history and theory of religion.

231 • Phenomenology of Religion (4) Smart

The course involves an examination of some approaches to phenomenology in recent literature; and then examines specific concepts and phenomena, such as worship, Shamanism, sacrament, religious identity, etc.

232 • Religion and Philosophy: Theories and Method (2-4) Comstock

A survey of ways in which religion and philosophy have been related in the history of Western civilization. Religious metaphysics, theology, and the approach of contemporary analytic philosophy to religion are considered. Course content variable. May be repeated.

233 • Religion and Literature: Theories and Method (2-4) Comstock

A survey of the work of literary critics and religious thinkers who have developed connections between the study of literature and religious thought. Course content variable. May be repeated.

235 • Seminar in Western Religious Thought (4) Capps

Historical and critical examination of selected figures and movements.

236 • Seminar on Exegetical Perspectives in Judaism and Islam: The Joseph Narrative (4) Wendell/Hecht

A study of the Joseph narrative in terms of Biblical and Koranic presentation as interpreted by medieval and modern exegetes. Attention will be given to the literary dimensions of the text as perceived by medieval and modern belletrists.

238 • Seminar in Modern Religious Thought (4) Comstock

Detailed examination of the intellectual structures of major nineteenth and twentieth century representatives of Western religious thought. Emphasis on methodologies and systematic form of basic positions.

239 • Seminar on Teilhard de Chardin (4) Staff

Reading and critical analysis of the works of Teilhard de Chardin.

240 • Seminar in the Sociology of Religion (4) Hammond

Detailed examination of major figures, schools, and types of research.

243 • Seminar on the Problem of Change in Religion (4) Capps

Developing language and methodology to treat change within the context of the history and theory of religion. Special attention will be given to the phenomena of syncretism, fusion, reconstruction, etc. to such formal factors as paradigm shifts, model transformations, kinesis, and catalysis, and to the theoretical approaches of Bellah, Kuhn, Douglas and Toulmin.

244 • Problems in Religion and Society (4) Michaelsen

Prerequisite: Graduate standing or permission of instructor.

Influence of religion upon society and society upon religion; institutional roles; transcendent referents; law and justice; value conflicts. Analysis of the thought of such figures as Weber, Troeltsch, Reinhold Niebuhr, H. Richard Niebuhr, J. D. Murray, Ellul and C. Dawson.

246 • Seminar in Comparative Mysticism (4) Smart

Historical and Comparative Analysis of selected mystical traditions in the East and the West.

248 • Semantics in Religious Pluralism (4) Panikkar

The question of universals in a cross-cultural setting. The names of and for God, Religion, Man, Grace, etc. Questions are addressed such as the following: Can names be transcended? Do they have a transcultural value?

249A • Heidegger and the Problem of a Cross-Cultural Language (4) Panikkar

A reading of Heidegger's works, centered on his analysis of the nature of language, as a basis for a diatopical hermeneutics of the contemporary encounter of traditions.

249B • Heidegger and the Problem of a Cross-Cultural Language (4) Panikkar

Application of Heidegger's insights to a cross-culturally valid philosophy of language.

250 • Seminar in the History of Religions (Western) (4) Staff

An intensive study of basic religious structures or symbols (e.g. patterns of initiation, ascension rituals, myths of primordial man.) Material will be drawn from the traditions of Judaism, Christianity, Gnosticism, Greco-Roman religions and Mediterranean cults.

251 • Seminar in Hellenistic Religions (4) Pearson

Historical and critical examination of selected figures, texts and phenomena pertaining to Graeco-Roman religion. Reading knowledge of Greek required. Course content variable; may be repeated.

252 • Seminar in Christian Origins (4) Pearson

Prerequisite: RS 116 or equivalent. Course content variable; may be repeated.

Historical and critical examination of selected figures, ideas and movements pertaining to nascent Christianity.

253 • Seminar in Hellenistic Judaism (4) Hecht, Pearson

Historical and critical examination of selected figures, texts, and phenomena pertaining to Judaism in the Graeco-Roman world, and its interaction with Hellenistic culture and religion.

254 • Seminar on Vedic Scriptures (4) Panikkar

Prerequisite: RS 160 or permission of instructor.

An analysis of the philosophical and religious motifs in the ancient Vedic texts of India. Research and discussion of the following: the Vedic sacrifice, the theory of creation, the views about man and the life of meditation.

255 • Seminar in Comparative Hindu-Buddhist Thought (4) Larson

Thematic and comparative analyses of Hindu theological traditions in India with Buddhist philosophical traditions in South and East Asia. Analysis of such problems as Hinduization, Sanskritization, Chinese Buddhist appropriation of Indian ideas and methodological presuppositions for cross-cultural study.

256A • Seminar in Cross-Cultural Religious Anthropology (4) Panikkar

An interdisciplinary approach towards an inte-

gral understanding of man taken from the human experience of the various religious traditions of mankind. Focus on problems of methodology.

256B • Seminar in Cross-Cultural Religious Anthropology (4) Panikkar
Sequel to 256A with focus on Primordial Myths.

256C • Seminar in Cross-Cultural Religious Anthropology (4) Panikkar
Sequel to 256A and B with focus on Fundamental Symbols.

256D • Seminar in Cross-Cultural Religious Anthropology (4) Panikkar
Sequel to courses 256A—B—C with focus on hermeneutics.

256E • Seminar in Cross-Cultural Religious Anthropology (4) Panikkar
Sequel to courses A—B—C—D. Transcultural symbols. The value and meaning of a symbol as a transcultural factor.

256F • Seminar in Cross-Cultural Religious Anthropology (4) Panikkar
Sequel to A—B—C—D, and E; Seminar will be on development and history of the language of dialectics.

257 • Seminar in Buddhist Studies (4) Staff
Historical, philosophical and bibliographic analysis of selected traditions within Buddhism. Also, consideration of the relation of Buddhist traditions to related phenomena within Hinduism.

258 • Seminar in Religion in America (4) Michaelsen
Intensive study of major figures and significant movements in the context of American culture.

259 • Topics in East Asian Buddhist Thought (4) Gimello
An historical and critical analysis of selected issues in the development of Buddhist thought in China, Korea and Japan.

260 • Seminar on Religion and Art in Indian Asia (Staff) (4)
A study of the relation between the religious and the esthetic in the cultures of Indian Asia, with special reference to the morphology and iconography of the mother goddess.

270 • Seminar in Religious Myth and Symbol (4) Comstock
A detailed survey of important approaches to religious myth and symbolism. The various methods of literary analysis and anthropological and sociological study, linguistic analysis and the phenomenology of religion, will be considered.

271 • Seminar in Aesthetic Dimensions of Religion (4) Capps
Analyses of visual design, models of spatial arrangement and structural investion as these pertain to form synthesis in religion.

272A—B—C • Religion and the Humanistic Disciplines (4) Comstock
An examination of methods by which religious studies can be related to such fields as literature, art, philosophy, psychology, sociology, among others.

273 • The Problem of Cosmologies (4) Smart
This seminar in the philosophy of religion will focus on the relation between traditional religious cosmologies and modern scientific views of the cosmos. Two main issues will be treated: the way in which cosmological symbolisms can clash with scientific knowledge, and the way in

which religious and scientific truths differ in their sources.

287 • Ascetic Religion in the West (4) Capps
Adjunct seminar on undergraduate course 187; the religion of the hermitage and cloister from St. Anthony and St. Benedict to New Camalodoli.

290 • Seminar in Major Texts and Figures (4) Staff
Seminar focuses on an intensive study of a major text or figure within a religious tradition. Course content variable; may be repeated.

594AA—ZZ • Special Topics (2-4) Staff
Special seminar on research subjects of current interest.

595AA—ZZ • Group Studies (1-4) Staff
Critical review of research in selected fields.

596AA—ZZ • Directed Reading and Research (2-5) Staff
Research and preparation of dissertation.

597 • Individual Study for Master's and/or Ph.D. examinations for advancement to candidacy. (1-12) Staff

598AA—ZZ • Master's Thesis Research and Preparation (2-5) Staff
For research underlying the thesis, writing the thesis.

599AA—ZZ • Ph.D. Dissertation Preparation (2-6) Staff
Terminal preparation of the dissertation.

Renaissance Studies

Advisory Committee

(See appropriate departmental entries for faculty information.)

- *Edwin Duval, Ph.D., *Associate Professor of French.*
- Robert Egan, Ph.D., *Assistant Professor of Dramatic Art.*
- Abraham Friesen, Ph.D., *Professor of History*
- William Frost, Ph.D., *Professor of English*
- Donald Guss, Ph.D., *Professor of English.*
- *Richard Helgerson, Ph.D., *Associate Professor of English.*
- *Gerhart Hoffmeister, Ph.D., *Associate Professor of German.*
- Mireya Jaimes-Freyre, Ph.D., *Associate Professor of Spanish.*
- *Enrique Martinez-Lopez, Ph.D., *Professor of Spanish.*
- *J. Sears McGee, Ph.D., *Associate Professor of History.*
- Peter T. Meller, Ph.D., *Professor of Art.*
- Alfred K. Moir, Ph.D., *Professor of Art.*
- *Michael W. O'Connell, Ph.D., *Associate Professor of English (Chairperson).*
- Alejandro Planchart, Ph.D., *Associate Professor of Music.*
- Robert Potter, Ph.D., *Associate Professor of Dramatic Art.*
- Phillip W. Powell, Ph.D., *Professor of History.*
- *William Prizer, Ph.D., *Assistant Professor of Music.*
- *Winston Reynolds, Ph.D., *Professor of Spanish.*
- Mark Rose, Ph.D., *Professor of English.*
- Homer D. Swander, Ph.D., *Professor of English.*
- Ronald W. Tobin, Ph.D., *Professor of French.*
- *Burr Wallen, Ph.D., *Assistant Professor of Art.*

*Member of Renaissance Studies Committee.

Concerns of the program

The major in Renaissance Studies is an interdisciplinary program intended to serve students interested in an undergraduate liberal arts major as well as those who plan to pursue graduate studies in the field. With the assistance of members of the Advisory Committee, students will set up individual programs structured by their special interests. Students should consult with their advisers each quarter from the beginning of their junior year to have their programs formally approved and to inform themselves of various special Renaissance courses. Students are also encouraged to explore the possibility of spending one of their undergraduate years in a European University with the Education Abroad Program.

Bachelor of Arts

Preparation for the major

Required: History 4A—B and a reading knowledge of Latin or a modern European language to be certified by examination. (Students who expect to do graduate work in

Renaissance Studies are strongly advised to study both Latin and a modern European language.)

Recommended: Art History 6C; Classics 37, 38, 40; English 20

Upper Division major

Forty upper division units are required, including: (1) History 120A—B (to be completed as soon as possible after entrance into this major) and (2) Renaissance Studies 100, and (3) 28 additional units from the following list, the selection to consist of related courses forming a coherent program and to be approved by a member of the Advisory Committee.

Art History

- 155B • Fifteenth Century Painting in Northern Europe
- 155C • Renaissance Art of the Fifteenth Century: 1400-1450
- 155D • Renaissance Art of the Fifteenth Century: 1450-1500
- 156A • Italy—High Renaissance
- 156B • Sixteenth Century Art of Northern Europe
- 156C • Mannerism
- 156D • Venetian Painting
- 156E • Michelangelo

Classics

A maximum of 12 units chosen in consultation with a faculty adviser.

Comparative Literature

- 105 • Classical Tradition

Dramatic Art

- 160B • Development of Drama
- 162 • Shakespeare on Film and Stage

English

- 102A • Major British Writers
- 117A • Shakespeare: 1593-1602
- 117B • Shakespeare: 1603-1613
- 117C • Shakespeare: Advanced Studies
- 117D • Shakespearean Renaissance Academy
- 117E • Shakespeare
- 144 • The European Renaissance
- 145 • Special Studies in English Renaissance Literature
- 146 • English Renaissance Verse and Prose
- 151D • Donne and Jonson
- 151S • Spenser

- 157 • English Renaissance Drama
- 162 • Milton

French

- 140A • The Generation of Rabelais
- 140B • French Renaissance Poetry
- 140C • The Anti-Renaissance
- *141X • Rabelais in Translation
- 150A • Mannerism and Classicism

German

- 167A • Humanism and Anti-humanism

History

- 106A • Western Physical Science to 1600
- 118 • Varities of Utopianism and Social Reform from Joachim of Flore to Karl Marx
- 140A—B—Q • Early Modern Britain
- 150A—B • Spain and the Spanish Empire
- 153 • Comparative Seaborne Empires
- 154A • Portugal Overseas
- 155A • History of Portugal
- 156A • History of Mexico

Italian

- 111 • Petrarch
- *116X • Machiavelli
- *116Y • Love and Chivalry
- *116Z • Love and Society
- *139X—Y• Survey of Literature in Translation

Music

- 102 • Sixteenth Century Counterpoint
- 180 • Studies in Renaissance Music

Renaissance Studies
Upper Division courses

100 • Medici Florence (4)
 An introduction to the interdisciplinary study of Renaissance civilization. Specific topics will vary from year to year and may include such subjects as Medici Florence, Fifteenth-Century Burgundy, Renaissance Neoplatonism, Renaissance Humanism, or Renaissance Petrarchism. Course may be repeated for credit with consent of program chairperson.

Portuguese

- 105A—B • Survey of Portuguese Literature
- *114 • Literature of the Portuguese Expansion
- 132A—B • Luis De Camoes

Religious Studies

- 100 • From Augustine to Luther
- 102A • Luther to Kant

Renaissance Studies

- 190 • Studies in Renaissance Civilization
- 199 • Independent Studies in the Renaissance

Spanish

- 110B • Survey of Spanish Literature
- *115A • Masterpieces of Spanish Literature
- 123A • Hispanic Balladry
- 131A—B • Golden Age Poetry
- 134 • Golden Age Novel
- 137A—B • Golden Age Drama
- 140A—B • Cervantes: “Don Quixote”
- 141 • Cervantes: Other Works
- 145 • Colonial Spanish American Literature
- 191 • The Theme of Don Juan in Spanish Literature

*Foreign literature in translation.

Correspondence information

Chairperson, Renaissance Studies Program, University of California, Santa Barbara, California 93106. Phone: (805) 961-3441.

190 • Studies in Renaissance Civilization (4)
 An interdisciplinary course on some particular aspect of Renaissance civilization. May be repeated for credit.

***199 • Independent Studies in the Renaissance** (1-5)
 Study or research under the guidance of a member of the Advisory Committee for seniors of high scholastic standing. Students wishing to enroll should prepare a short plan of study for their course work. Not more than five units of Renaissance

Studies 199 may be taken in one quarter and not more than 12 units total.

*See M-2 for 198/ 199 independent studies unit limitations.

Russian Area Studies

Advisory Committee

(See appropriate departmental entries for faculty information.)

Dimitrije Djordjevic, *Professor of History (Chairperson)*.

Albert Kaspin, Ph.D., *Associate Professor of Russian*.

Donald B. Johnson, *Associate Professor of Russian*.

[*The Russian Area Studies major is being discontinued effective Fall 1981. Students entering the major during the 1980-81 academic year and those already in the major will be permitted to complete the major as planned.*]

Concerns of the program

Russian Area Studies is an interdepartmental major which can be taken by a student only in conjunction with another departmental major, i.e., a double major (at this point: Economics, History, Political Science or Russian). The major aims at the provision of a broad interdisciplinary background designed to enrich the student's professional training provided by a department. It is intended to serve the needs of the student who wishes to pursue further graduate study or who desires to obtain a general education with a greater emphasis on an important world area.

Departmental Advising

See Chairperson.

Bachelor of Arts

Preparation for the major

The following courses are required:

Russian 1,2,3,4,5,6, or equivalent • Elementary and Intermediate Russian

History 4ABC • Western Civilization

Upper division major

Required: 36 upper division units, including:

History

135ABC • Russian History to 1800, 1800-1917, 1917 to present;

Political Science

143 • Governments and Politics in the Soviet Union;

Russian

115AB • Survey of Russian Literature,

125 • Twentieth Century Russian Literature; and,

Eight units of upper division electives chosen from:

Art History

153B • Medieval Art; Byzantine

Economics

126 • Introduction to Marxist Economics

Geography

155 • Geography of the Soviet Union

History

124E • Balkans and the Eastern Question

124M • Beyond Marx and Lenin: The Yugoslav Experiment

124P • Peasant, National, and Communist Revolutions in the Balkans

127AB • European Socialism

135Q • Problems in the History of Russian Revolutions

Political Science

130 • Comparative Communist Systems

144 • Governments of Central and Eastern Europe

Russian

102 • Russian Composition

103 • Chekhov's Short Stories

105 • Pushkin

121 • Russian Short Story

122 • The Novella

123 • Poetry of the 19th Century

127 • The Silver Age

130 • Dostoevski

131 • Tolstoy

133 • Chekhov

134 • Nabokov

140 • Problems in Translation

150 • Russian Folk Literature

161 • Writings of Russian Dissidents

Also required: The student must show proficiency in Russian equivalent to completion of Russian 101C. The requirement may be satisfied either by completion of that course with a grade C or better or by examination.

The program, of course, is to be made out by each student in cooperation with one of the members of the Committee who would normally serve in the department of the student's allied major.

Correspondence information

Russian Area Studies, Department of History,
Ellison Hall, Room 4814, University of California,
Santa Barbara, California 93106. Phone: (805)
961-2556 or 961-2991.

Social Sciences

Advisory Committee

(See appropriate departmental listings for faculty information.)

John D. Baldwin, Ph.D., *Professor of Sociology*
(*Chairperson*).

George Borjas, Ph.D., *Associate Professor of Economics*.

Charles McClintock, Ph.D., *Professor of Psychology*

Isidro D. Ortiz, Ph.D., *Assistant Professor of Chicano Studies*.

John E. Talbott, Ph.D., *Associate Professor of History*.

Majors in the following fields of the social sciences are available and are described in the appropriate departmental entries in this catalog: anthropology, economics, geography, history, political science, and sociology. Students with interests in these fields are invited to visit the department offices for additional information.

Concerns of the program

The major in Combination Social Sciences exists to serve the needs of those undergraduates who prefer to explore a broad spectrum of the social sciences, obtaining an acquaintance with socio-cultural, economic, and political aspects, along with a greater concentration in one area of study. For students contemplating teaching in the California public elementary schools, this major will fulfill much of the required liberal studies background. However, it is not recommended for students who expect to do graduate work in one of the social sciences.

A student who wishes to major in Combination Social Sciences must select a primary and two secondary fields of emphasis within the social sciences, as described in the upper division major below. An adviser will be assigned to each student in this major within the department of primary emphasis, chosen from anthropology, economics, geography, history, political science, or sociology.

Bachelor of Arts—Combination Social Sciences

Preparation for the major

All students in this major must complete requirements 1 through 3, as follows:

1 • History 4A—B—C. (Upper division students may substitute up to 12 units of UD European history courses for part or all of this series on a one-for-one basis, without

petition. See History Department for a list of acceptable courses.)

2 • One course from each of the following three groups, including one course in the area of primary emphasis:

Group I	Anthropology	2 (or 101), 3, 102.
	Sociology	1 (or 101), 2.
Group II	Political Science	12 (or 100 or 5 and 10*), 25.
	Geography	2
Group III	Economics	1 and 2* (or 109), 110.

*(Note: The sequences Political Science 5-10 and Economics 1-2 count as a single course for these requirements.)

3 • If a student's field of primary emphasis is:
Anthropology—take one other course in anthropology listed in Group I above.
Sociology—take one other course in sociology listed in Group I above.
Political Science—take one other course in political science listed in Group II above.
Geography—take Geography 101.
Economics—take one other course in economics listed in Group III above or take Economics 5.
History—take one other lower division course in history.

Upper Division major

Forty upper division units are required, including at least 24 units in the subject field of primary emphasis (i.e., anthropology or economics or geography or history or political science or sociology) and eight units each in two additional subject fields of secondary emphasis chosen from anthropology or economics or geography or history or political science or sociology. (Eight units of upper division courses in social philosophy or social psychology may be substituted for one of the two areas of secondary emphasis, provided that they have been preceded by appropriate introductory preparation and have been specially approved by petition to the Committee Chairperson.)

Anthropology 101, Economics 109, Political Science 100, Sociology 101, courses in physical geography, and courses in accounting are not acceptable for upper division credit in this major.

Career opportunities

The student should seek information regarding career op-

portunities from an undergraduate adviser in the field of primary emphasis.

Teaching credentials

Students who complete a major in Combination Social Sciences may be eligible for pursuing a California teaching credential. Consult with the credential adviser in the department of emphasis for specific departmental requirements.

Details of State and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180, Phelps Hall.

Correspondence information

Refer all inquiries to the office of intended primary emphasis. See departmental catalog entry for correspondence information.

Sociology

Professors

John D. Baldwin, Ph.D., *Johns Hopkins University; behavioral sociology, social psychology, animal behavior.*

Richard A. Berk, Ph.D., *Johns Hopkins University; quantitative methods, evaluation research, sociology of law.*

Robert H. Billigmeier, Ph.D., *Stanford University; interethnic relations, ethno-nationalist movements, social movements, population.*

Donald R. Cressey, Ph.D., *Indiana University; theories of crime and criminality, criminal justice, correctional organization and change.*

Sethard Fisher, Ph.D., *UC Berkeley; social and personal change, socialization, social welfare, race relations.*

², ³Richard Flacks, Ph.D., *University of Michigan; political sociology, social movements, political consciousness.*

David Gold, Ph.D., *University of Chicago; political sociology, public opinion, mass communication, methodology.*

Phillip E. Hammond, Ph.D., *Columbia University; sociology of religion, religion and politics.*

¹Harvey L. Molotch, Ph.D., *University of Chicago; urban growth, media studies, domination.*

³Thomas J. Scheff, Ph.D., *UC Berkeley; social psychology, emotions, mental disorder.*

Tamotsu Shibutani, Ph.D., *University of Chicago; social psychology, theory construction.*

John A. Sonquist, Ph.D., *University of Chicago; research methods, computer applications, complex organizations, social networks.*

Thomas P. Wilson, Ph.D., *Columbia University; ethnomethodology, theory, foundations.*

Don H. Zimmerman, Ph.D., *UC Los Angeles; ethnomethodology, conversation analysis, observation of natural settings.*

Assistant Professors

¹Sarah Fenstermaker Berk, Ph.D., *Northwestern University; sociology of work, gender inequality, qualitative methods, deviance.*

William T. Bielby, Ph.D., *University of Wisconsin; social stratification, labor markets, quantitative methods.*

Roger O. Friedland, Ph.D., *University of Wisconsin; political sociology, urban sociology, theory.*

¹Victor Nee, Ph.D., *Harvard; political sociology, Asian American studies, Chinese society, modernization/development.*

Research Associate

Leonard Broom, Ph.D., *Duke University; differentiation, stratification, social mobility, population change.*

Professor Emeritus

Charles B. Spaulding, Ph.D., *University of Southern California.*

¹Absent on Leave Fall 1980

²Absent on Leave Winter 1981

³Absent on Leave Spring 1981

Associate Professors

¹Richard P. Appelbaum, Ph.D., *University of Chicago; urban problems, community development, critical theory.*

Morris F. Friedell, Ph.D., *University of Chicago; humanistic sociology: personal and political.*

², ³Gary I. Schulman, Ph.D., *Stanford University; social psychology, experimental methods, sex roles, small groups analysis.*

Bruce C. Straits, Ph.D., *University of Chicago; demography, social research techniques.*

Concerns of the department

Sociology is the systematic study of social life. Sociologists seek to understand the process by which societies, communities, institutions, and organizations are created, maintained, undermined, and transformed, and the ways in which social life shapes individual members of society. In addition, sociologists seek to understand the mechanisms of interaction between people that underlie social phenomena. Sociologists are engaged in gathering systematic, objective information about social phenomena. They are engaged in the construction of theoretical perspectives by which such processes can be understood

and predicted. They are engaged in a process of interpretation of the significance of events and the meanings that are embodied in social activity. Thus, sociologists are engaged in an effort to describe, understand and predict, and interpret the meaning of social processes and trends.

The undergraduate sociology major at UCSB is designed to be flexible in order to enable students to choose or combine three different purposes for studying sociology. First the sociology major can be *the core of a general liberal arts education* for students having a strong concern with our contemporary society, its problems, and the human quest for a just and rational social order, or for students who are just plain anxious about how society works. Second, the major *can be used as a preparation for a career* in such fields as law, management, journalism, social work, urban and environmental planning, public service, teaching, corrections, mental health, counseling, and other service professions. Third, the sociology major *can be used as preparation for graduate study* for a career as a professional sociologist.

The requirements for the sociology major are designed to provide students with a basic grounding in the nature and methods of the discipline while permitting wide latitude for the individual student to pursue or explore his or her interests. The sociology department is composed of men and women who are active contributors in the field; its graduate program draws students from all over the U.S. and from many other countries. The department is internationally recognized for its diversity of perspective and particularly for its support for emerging perspectives and innovative approaches to the discipline.

Departmental advising and publications

The Department of Sociology has an undergraduate academic adviser who advises undergraduates, incoming students, and prospective students about the sociology major—what it has to offer and what it requires. The Adviser can also help students prepare for Graduate School, as well as for various areas of special interest in Sociology. Students should feel free to come in whenever they have questions about planning their course of study, or about the Sociology curriculum and requirements in general.

The department publishes a booklet, "How to Major in Sociology," which is an excellent guide for both majors and students interested in the field of Sociology. This booklet, as well as information sheets about the major and major requirements, are available from the main office or from the Academic Adviser. The department also issues detailed information concerning courses prior to each registration period which is available in the departmental office, Ellison 2834.

Bachelor of Arts

Preparation for the Major

Required courses:

Sociology 1, Social Organization *or* Sociology 101
Sociology 2, Society and Personal Growth
Sociology 3, Introduction to Quantitative Sociological Studies

One of the following sequences:

- a) Anthropology 2, Introductory Cultural Anthropology, *or* Anthropology 101, General Anthropology *and* one additional course in Anthropology (except physical).
- b) Either Economics 1, Principles of Economics—Micro, *and* Economics 2, Principles of Economics—Macro, *or* Economics 109, (Introduction to Economics) *and* one additional course in economics (except 1 or 2);
- c) History 4A—B—C, Western Civilization.
- d) Political Science 5, American Government: The Constitutional System, *and* Political Science 10, American Government: The Political Process; *or* Political Science 12, American Government and Politics *or* Political Science 100, American National Government, *and* one additional Political Science course.
- e) Psychology 1, General Psychology, *or* Psychology 101, Principles of Psychology, *and* one upper division psychology course.

Courses taken in preparation for the major (except Sociology) may be used to satisfy the appropriate General Education requirements.

Upper Division major

To qualify as an upper division Sociology major, students *must have completed* Sociology 1 (or 101), 2, 3, or equivalents.

Required: 36 units of upper division Sociology courses, except 101. In certain cases, a maximum of nine units of upper division work in closely allied fields may be taken as part of the required total of 36 units.

Students may take up to eight units of the following courses on a P/NP basis: 146, 191A, 191C, 191D, 191E, 194, 198, 199.

NOTE: Only 4 units of Sociology 119A—B—C can be applied to the upper division major.

RELATED FIELDS. Students may select their 8 to 9 units of related courses from the following list without petition:

Anthropology 102, 104, 106, 107, 109, 113, 114, 115, 116, 131, 134, 135, 136, 138, 140, 142, 144, 145, 148AB, 149, 154, 160, 171, 172, 192
Asian American Studies 100B, 110
Black Studies 100, 102, 104, 105, 107, 110, 120, 160A, 160B, 160C, 195A
Chicano Studies 101AB, 115, 144, 164
Economics 100AB, 101, 102A, 102B, 102C, 103, 107, 110, 112, 113A, 113B, 114, 115, 116, 120, 160, 165
Education 114
Ergonomics 108
History 101AB, 105, 159AB, 169AB, 173AB, 178AB, 183

Linguistics 132

Political Science 102, 106, 110, 111, 147, 150, 154, 174, 177AB

Psychology 102, 103, 104, 107, 112, 114, 120, 122, 123, 127, 150

Religious Studies 152, 156AB, 182

Recommended Programs: Although the major is designed to be flexible, the following may serve as guidelines in helping the student select courses to effectively achieve his/her goals:

(1) **Preparation for graduate training for a career as a professional sociologist.** Students planning to attend graduate school are advised to take basic methods and statistics courses (at least one course from group I.A from the list preceding the undergraduate course offerings), and at least one theory course (group X). Additionally, it is advised that students initially take a wide range of different courses for diversity of exposure, and then specialize in one or two areas that hold special interest. Graduate programs in sociology generally seek students who are competent in sociological research methods; who are familiar with the principle theoretical issues of the discipline; and who have an in-depth knowledge of at least one important substantive area. Students who anticipate applying for graduate school should discuss their programs at an early stage, either with the undergraduate adviser or a faculty member. It is also recommended that such students seek individualized work with faculty members (group XII).

(2) **Public and social affairs.** There is an increasing demand for persons who can provide analytic and research skills to governmental bodies, civic organizations, labor unions, and social agencies—groups engaged in the development of public policy planning. Careers in these fields typically involve graduate study at the Master's level in urban planning, social work, public affairs, business, law, or sociology. Students anticipating such careers should plan their programs with graduate study in mind, although it is sometimes possible to begin a career with only the B.A. degree. A program in public and social affairs might typically involve a background in methods and analysis (group I); a basic knowledge of societal organization and change (group III), a special focus on urban problems (group IV); and an in-depth knowledge of one or more additional areas of particular interest. Field experience through an internship (191A) is strongly recommended. It is possible to get such experience in a variety of institutional settings in the Santa Barbara community—in public agencies, the justice system, schools, newspapers, community groups, counseling settings, etc.—and, with faculty sponsorship, receive course credit. Students seeking careers in public affairs should also acquire a basic foundation in computer skills (group I.B).

(3) **Technical skills in data management.** The department has considerable strength in quantitative methods of research and analysis. It has its own computer facility on the second floor of Ellison Hall, providing terminals for student use. The facility offers staff assistance to students engaged in course-related projects. In addition to courses listed in the catalog, the facility routinely offers special courses on programming and other similar skills (interested students should check with the computer facility staff

for up-to-date listings). The department also has an affiliation with the Social Process Research Institute (SPRI), where policy-related research is conducted. Career options for students with advanced technical skills are many and growing in government, research, and business firms. Students pursuing this program are advised to learn not only the technical aspects of research, but the sociological dimension as well; the institutional settings that frame policy-related problems; ways to formulate and conduct research programs; and intelligent interpretation of the results of analysis. Students with this interest should take three or more courses from groups I.A and I.B; courses from groups II, III, IV, IX, X, or XI; and courses from other groups according to interest.

(4) **General sociology.** Many students are uncertain of their career plans, but want a liberal arts education with a sociological focus. Alternatively, some students have very specialized needs, and seek the freedom to carve out their own program from a variety of different course offerings. A program in general sociology will accommodate both types of students. Such students are encouraged to sample widely from the course offerings of this department, as well as from interesting courses in other departments. The section grouping undergraduate offerings in sociology by subject matter provides coherent orderings of courses that might eventually serve to define a more focused program.

Master of Arts

The M.A. program in sociology is oriented toward the Ph.D. program and is viewed as an integral part of preparation for the doctorate. Students should normally apply for admission to both programs. Prospective applicants should inquire early in the academic year concerning deadlines for submission of applications for admission and financial support. Applications are accepted for the Fall only; the deadline is March 31.

Admission Requirements and Prerequisites

In addition to the information required in the application for admission to graduate status in the University, the applicant must submit scores on the Aptitude test of the Graduate Record Examination.

Applicants are expected to have training substantially equivalent to the undergraduate major in this department, including research methods, statistics, and the development of sociological theory. Students with inadequate backgrounds in these areas may be admitted but are expected to make up serious deficiencies as early as possible in their first year.

Departmental Requirements

The M.A. degree is awarded according to *Plan II* of the University: 36 units of course work, of which at least 18 are graduate units, and a Comprehensive Examination.

Prior to the Comprehensive Examination, the student must submit a short research paper (not a thesis), prepared under the supervision of an Advisory Committee of three faculty members, and have satisfied the Advisory Committee's recommendations concerning the breadth and intensiveness of preparation in sociology, including

theory, research methods, and formal analysis techniques (usually statistics, mathematics, modern logic, or linguistics). Required course work must be completed by the end of the quarter in which the examination is taken.

To receive the M.A. degree, the student must receive a "pass" or higher grade on an oral Comprehensive Examination. To continue in the Ph.D. program, a student must receive a "high pass" or an "honors pass." The M.A. program should normally be completed by the end of the second year, but a student may petition for an extension.

Doctor of Philosophy

Admission Requirements and Prerequisites

All candidates are expected to have substantially equivalent training as required for the B.A. in this department—36 units of upper division work in sociology, including courses in research methods, statistics, and the development of sociological theory. In addition to fulfilling the general requirements for admission to graduate status, the student must submit scores on the Aptitude test of the Graduate Record Examination.

Departmental Requirements

To be admitted to the program, the student must complete the Department's requirements for the M.A., or the equivalent. Students may be admitted to graduate study in the Department without admission to the Ph.D. program pending completion of these requirements; however, these must be completed by the end of the second year.

A requirement for the Ph.D. is a demonstration of competence in research methods appropriate to the student's area of major specialization. This requirement may be met by: (1) Examination, (2) passing, with a grade of B or higher, one of Sociology 201A, B, or C, or an approved alternative course (e.g., linguistics, computer programming), together with (3) approval by one faculty member of a research paper typically initiated in Sociology 201 and completed in a subsequent quarter of Sociology 596; alternatively, this requirement may be met by an M.A. research paper demonstrating appropriate research competence.

No language is required, but a student whose specialty requires knowledge of foreign languages will be required to demonstrate competence.

Each student must pass a written preliminary examination in two areas of specialization. In consultation with the examination committee, the student will prepare a bibliography in the selected areas and submit it to the committee for approval. The preliminary examination will be based on these approved bibliographies. The preliminary examination normally must be taken within 18 months after admission to the Ph.D. program. Under special circumstances, a student may petition for an extension.

The student must pass a qualifying oral examination following the preliminary examination, administered by a committee appointed by the Graduate Council, normally focusing upon the student's major area of specialization and particularly on the proposed research.

The candidate must complete a doctoral dissertation. Normally, the individual will be called upon for an oral defense of this dissertation.

Career opportunities

Although teaching is still a dominant activity of sociologists today, the broad scope and relevance of the subject matter of sociology has opened many new career opportunities, indeed, its career potential is just beginning to be tapped. Sociology is a popular major for students planning futures in such professions as law, business, education, architecture, medicine, social work, politics, and business administration, or in local, state, or federal government. Generally these career options require study or training beyond the Bachelor of Arts degree. Students entering the job market with a B.A. in Sociology will find themselves competing with other liberal arts students who have majored in history, psychology, etc.; and not find much in the way of "sociology-related" jobs to choose from. Here, a strong undergraduate program in sociology can conceivably produce a competitive advantage. For example, students interested in business careers might emphasize courses in industrial sociology and complex organizations; students seeking work in public welfare agencies might concentrate their course work in areas such as stratification, race and ethnic relations, sociology of the family, and urban sociology. Also considered very valuable by persons already employed in non-academic jobs is a strong background in research methods and statistics as well as knowledge of current social science oriented computer technology. Our department offers a number of courses in the methodology of social surveys, the techniques of data analysis, and computer applications in the social sciences. These courses can help provide training for specific skills that are relevant to employment opportunities related to the social sciences. Printed in the departmental booklet, "How to Major in Sociology," are career-oriented "menus" designed to help students prepare for various vocational objectives. Remember, however, even the most thorough B.A. degree is limited in the kinds of employment for which it prepares the students.

The Career Resource Room located in the Counseling Center, Bldg. 478, offers information on careers and career planning as well as career oriented workshops throughout the academic year. The Placement Center, located in Bldg. 427, is also a good information source regarding the job market and potential careers. Students are also encouraged to write for a free booklet, *Careers in Sociology*, available from the American Sociological Association, 1722 N Street, N.W., Washington, D. C., 20036. This booklet describes in detail various vocational areas within Sociology and provides a series of vignettes illustrating kinds of skills and routines involved in these careers, describing the nature of the working environment and discussing the prospects for advancement. The booklet also discusses career preparation and offers some advice about the choice between major career options.

Teaching credential

Students who complete a major in this department may be eligible to pursue a California teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180 Phelps Hall.

Correspondence information

**Department of Sociology, University of California,
Santa Barbara, California 93106 Phone: (805)
961-3314.**

Offerings in Sociology

Grouped by Subject Matter

The following listing groups sociology courses that deal with related subject matter and are often planned to mesh with each other. In planning their programs, students should refer to the discussion of Recommended Programs in the preceding narrative where four different programs of study are identified. Students should also refer to the course descriptions immediately following this section and should note prerequisites for courses before planning their schedules. Courses are often not in sequence by number, and a higher numbered course can be prerequisite to a lower.

I. Quantitative methods of sociological research and data analysis.

These are courses concerned with methods of collecting and analyzing quantitative information, and several provide instruction in the use of computers. Basic knowledge of statistics is a prerequisite for these courses; a minimum preparation would be provided by Sociology 3, but either Math 33 or Econ 5 are preferred as background.

A. Research methodology courses

- 103 • Methods of Sociological Research
- 104AB • Intermediate Data Analysis in Sociology
- 105 • Lab in Group Research
- 108 • Intro to Mathematical Sociology
- 110 • Data Processing and Analysis
- 112AB • Practicum in Social Research

B. Computer-related courses

- 106 • Computer Simulation of Computer Processes
- 109A • Intro to Computer for Social and Behavioral Sciences
- 109B • Compute Applications in the Social Sciences
- 109C • Special Topics in Computer Applications in the Social Sciences
- 113 • Systems Analysis and Information System Design
- 115 • Minicomputer-based Computer-aided Instruction Systems
- 192 • Projects in Computer Science (individualized instruction)

II. Societal organization and change.

These are courses concerned with large-scale social processes, and the core issues of sociology—how societies maintain themselves and how they develop and change.

- 111 • Computers in Society
- 121 • Environment and Society

- 122 • Social Stratification
- 122Q • Social Stratification in the US: Intermediate level
- 124 • Collective Behavior
- 125 • Intercultural Studies in Community Milieux Abroad
- 129 • Sociology of International Politics
- 130 • Comparative Social Development and Change
- 131 • Political Sociology
- 131R • Sociology of the Modern State
- 132 • Public Opinion
- 134 • Social Movements
- 138 • The Sociology of Conflict
- 157 • Radicalism in American Life
- 161 • Sociology of People's Republic of China
- 166AB • Approaches to the Future

III. Demography.

Demography is concerned with the dynamics of population change, and the effects of such changes on larger social processes.

- 107 • Demographic Analysis
- 123 • Population
- 156 • Current Issues in Demography

IV. Urban society.

These are courses concerned with cities, and with institutions that typically occur in urban settings. Courses in this grouping tend to be policy-oriented, in that they often focus on urban problems and their solutions.

- 120 • The Community
- 121 • Environment and Society
- 126 • Urban Society
- 126R • Selected Topics in Urban Sociology
- 127 • Sociology of Urban Planning and Design
- 150 • Principles of Social Welfare
- 172 • Sociology of Crime and Delinquency
- 174 • Criminal Justice and the Community
- 191B • Seminar in Community Development and Social Service

V. Mass communication and public opinion.

These are courses concerned with the formation and social impact of public opinion, through mass media (newspapers, radio, television) and other means. Students interested in this area may also be interested in the following courses in the Speech Department: 103, 104, 139, 144, 145, as well as Political Science 120.

- 119ABC • Sociology of News
- 132 • Public Opinion
- 133 • Sociology of Mass Communication

VI. Race and ethnic relations.

These are courses concerned with problems of racial and ethnic conflict, and with the development of ethnic communities. Students are referred to Black Studies, Chicano Studies, and Asian American Studies for related listings.

- 128 • Inter-Ethnic Relations
- 128Q • Ethnicity, Nationalism and Ethnonationalist Movements in the Modern World

- 137 • Sociology of Black Nationalism
- 139AB • The Sociology of Black-White Relations
- 144 • The Chicano Community

VII. Interpersonal relations and social settings.

These are courses concerned with understanding the dynamics of interaction of individuals in face-to-face and small scale settings.

- 136 • The Analysis of Conversational Interaction
- 136Q • Special Studies in Conversational Interaction
- 141 • Interpersonal Relations
- 143 • Small Groups
- 148AB • The Analysis of Social Settings
- 149 • Intro to Ethnomethodology

VIII. Socialization and social roles.

These are courses concerned with the social-psychological development of individuals and the relation between the individual and society. Courses focus on the ways in which individuals are prepared for social roles ("socialization"), and the development of identity. An important concern is with the development of sex roles, gender inequality, and the position of women in society.

- 140 • Aging in American Society
- 142 • Socialization
- 142H • Honors Seminar in Socialization
- 145 • Adult Socialization
- 147 • Current Issues in Social Psychology
- 151 • Images of Women in Film
- 152 • Sociology of Human Sexuality
- 152H • Advanced Study in the Sociology of Human Sexuality
- 153 • Women and Work
- 154 • Sociology of the Family
- 155A • Women in American Society
- 155B • Sociological Perspectives on Women
- 158 • Personal Identity
- 172 • Sociology of Crime and Delinquency
- 183ABC • Socialization and Personal Change
- 184 • Sociology of the New Therapies

IX. Sociology of law, crime, and criminal justice.

These are courses concerned with "deviant behavior"—behavior which violates social norms, and the response of society to such behavior, particularly through its legal institutions. Students are also referred to the listings of the Law and Society Program.

- 170 • Sociology of Deviant Behavior
- 171 • Sociology of Mental Illness
- 172 • Sociology of Crime and Delinquency
- 173 • Sociology of Law
- 174 • Criminal Justice and the Community
- 175 • Sociology of Punishment and Corrections

X. Theoretical issues in social science.

These are courses concerned with the classic and contemporary framework for analyzing society. The nature and origins of such theories are examined and evaluated.

- 101 • General Sociology (does not count as upper division credit for the major)
- 135 • Sociology of Knowledge
- 168 • Science and Humanism
- 180A • Critical Perspectives on Industrial Society: From Social Philosophy to Marx
- 180B • Critical Perspectives on Industrial Society: Post Marxian and Structural Theory
- 185 • Development of Sociological Thought

XI. Sociology of institutional settings.

These are courses concerned with organizations and occupations in contemporary society—bureaucracies, schools, professions, "alternative institutions," and other groups of individuals engaged in some common purpose.

- 102 • Sociology, the University, and Society
- 133 • Mass Communications
- 159 • Occupations and Professions in Modern Society
- 160 • Social Relations in the Workplace
- 164 • Sociology of Education
- 167 • The Structure and Dynamics of Organizations
- 175 • Sociology of Punishment and Corrections
- 190AB • Workshop in Organizational Studies

XII. Advanced courses.

These are courses that focus on special topics, and in which enrollments are generally selective and require permission of the instructor. They may typically involve small seminars or individualized tutorials.

A. Seminars and classes in special topics.

Each quarter the department offers one-time-only courses in special topics of unusual interest. Students should check the department office each quarter for current information on the following courses:

- 146 • Special Topics in Sociology
- 147 • Current Issues in Social Psychology
- 193 • Senior Seminar
- 194 • Group Studies for Advanced Students

B. Individualized studies or tutorials.

These courses are arranged jointly by the students and an instructor:

- 191A • Field Projects in Community Development and Social Service
- 191CDE • Field Placement in the Helping Professions
- 198 • Readings in Sociology
- 199 • Independent Studies in Sociology

Sociology

Lower Division courses

1 • Social Organization (4) [E1]

The systematic study of human society; the structure of social groups, institutions, and societies, and their relationships to cultural patterns.

2 • Society and Personal Growth (4) [E1]

Prerequisite: Sociology 1, or consent of instructor.

The introduction of the individual into group life; the organization and perspectives of personality; the social control of conduct.

3 • Introduction to Quantitative Sociological Studies (4) [E1]

Prerequisite: Sociology 1 and 2

An introduction to the fundamentals of quantitative analysis to enable students to interpret findings of social research so they will be prepared for advanced course work in sociology and able to intelligently participate as citizens in an increasingly statistically oriented society.

1FS • Freshman Seminar (3)

A seminar specifically for freshmen discussing current topics of interest in Sociology. Topics will vary depending on the professor teaching. May not be repeated for credit.

40 • Introduction to BASIC Programming (2)

Course will offer an introduction to interactive programming. The language to be taught is BASIC. Class is designed to be taken concurrently with Sociology 3, 43, 44, or 104A—B. It will be open to undergraduates in other departments who are interested or required to enroll.

43 • Introduction to Social Research (4) [E1]

Prerequisite: One course in sociology, anthropology, or political science, or consent of the instructor.

Assumptions underlying scientific research. Science and values. Relation of theory to research. Elements of field-work, survey, and experimental methods.

44 • Elementary Statistics (4) [E1]

Prerequisite: Sociology 43.

Techniques for describing and analyzing quantitative data. Tabular and graphic presentation; commonly used measures of association; samples and sampling error; commonly used statistical tests.

46 • Sex Roles and Sexuality (4) [E1]

Male-female differences as a social institution. Social and psychological processes in the development of sex roles, with emphasis on achievement orientation, emotionality, assertiveness and sexuality.

48 • Social Problems (4) Cressey [E1]

This course will analyze the sources of social problems in modern industrial societies. We will discuss in survey form the sociological studies and theoretical propositions dealing with such things as crime, mental illness, war, urban problems, and problems of inter-nation relations.

Upper Division courses

Prerequisite to Upper Division courses: Sociology 1 or 101, 2, 3, or equivalent, or consent of the instructor for students who are not sociology majors.

101 • General Sociology (4) [E1]

The major concepts, principles, and problems of sociology. Not open to those who have had Sociology 1.

102 • Sociology, The University and Society (4) [E1]

Among the main topics are: Society, the University, and the Discipline. Sub-topics include: Social and Personal Responsibility, the University and Social Change, Departmentalization of Knowledge, Decision-Making in the University, Clientele of University, Concept of Academic Freedom, Student Power, Ethnic and Other Minorities, Organization of Profession of Sociology, and Professional vs. Liberal Education.

103 • Methods of Sociological Research (4) Straits [E1]

Prerequisites: Sociology 3 or equivalent.

Fundamentals of designing, conducting, and analyzing social surveys. While the main focus is on survey techniques, problems of design and interpretation in experimental and observational studies are touched upon in terms of similarities and contrasts.

104A—B • Intermediate Statistics (4-4) Berk, R., Bielby, Wilson [E1]

Prerequisites: Sociology 3 or equivalent.

Multiple regression estimation, statistical inference; applications to analysis of sociological data; structural-equation models with applications.

105 • Laboratory in Group Research (4) Schulman [E1]

Prerequisites: Sociology 103 and 143, or consent of instructor.

Practicum in laboratory methods of research in the behavior of small groups.

106 • Computer Simulation of Social Processes (4) Sonquist [E1]

Prerequisite: Consent of the instructor.

Applications of computer simulation methodologies in the analysis of social and political processes.

107 • Demographic Analysis (4) Straits [E1]

Prerequisite: Sociology 123 or consent of instructor.

Analysis of published demographic research with special reference to the accuracy of data from censuses and other sources; standardization and other methods for controlling differences in population composition; computation and use of rates and indexes, population estimates and projections.

108 • Introduction to Mathematical Sociology (4) [E1]

Prerequisites: Mathematics 30 and any two Upper Division courses in sociology, or the consent of the instructor.

Analysis of social systems through the use of mathematical tools; survey of structural, quantitative, and stochastic models.

109A • Introduction to Computing for Social and Behavioral Sciences (4) Sonquist [E1]

Introductory Computer Science concepts, programming principles and fundamentals of digital computers and information processing. Mathematical background not required.

109B • Computer Applications in the Social Sciences (4) Sonquist [E1]

Prerequisites: Sociology 109A, EE, 3A, EE 5, Mathematics 6A, or equivalent, or consent of instructor.

Survey of computer applications in the social sciences: statistical analysis, research data management, simulation, control of experiments, content analysis and analysis of text, information retrieval, etc.

109C • Special Topics in Computer Applications in Social Science (4) Sonquist [E1]

Prerequisites: Sociology 109A, EE 5, or equivalent, or consent of instructor.

An advanced course dealing with topics selected by the lecturer. The emphasis will be on areas of computer applications within the social sciences such as research data base management, statistical computation, computer control of experiments, content analysis, information retrieval, and simulation of social systems. May be taken for no more than three quarters.

110 • Data Processing and Analysis (4) Sonquist [E1]

Prerequisite: Sociology 3.

Course will focus on basic principles of data organization and statistical analysis employing computer based research techniques. Students will learn how to utilize available user-oriented statistical programs as an integral part of the research process.

111 • Computers in Society (4) Sonquist [E1]

The course is an introduction to computers, their applications, and their impact on men and social institutions. The main objective of the course is to provide the student with factual and technical information to give the ability to make reasoned judgments about computer use, to show the social problems computers are creating along with possible remedies, and to urge constructive and creative thinking about technology, its uses, and its social impact.

112A—B • Practicum in Social Research (4-4) Schulman [E1]

This two-quarter sequence deals with study design, conceptualization, measurement, and data collection. Students will be working on a single research project conducted over two quarters.

113 • Systems Analysis and Information System Design (4) Sonquist

Prerequisites: EE 3A, EE 5, Mathematics 6A, Sociology 109A or approval of instructor.

Introduction to principles and techniques involved in the analysis of information processing requirements of large-scale organizations and the development of computer-based information systems. Includes overview of implementation, control and evaluation phases of system development.

115 • Minicomputer-based Computer-aided Instruction Systems (4) Sonquist

Prerequisites: Senior standing, or consent of instructor.

For students who plan to utilize computers as teaching tools. Computer fundamentals, developing skill in a programming language. Programming techniques with applications to educational problem-solving strategies. Techniques of utilizing the computer to assist in providing individualized instruction. CAI history, modes, languages, software and hardware requirements. Methods of developing courseware. Economics of CAI systems.

118 • Electoral Politics (4) [E1]

An examination of theoretical and practical issues involved in participation in the U.S. electoral system. A series of interdisciplinary lectures and core readings, supplemented by consideration in discussion sections of various facets of the forthcoming elections.

119A—B—C • Sociology of News (4-4-4) Gold [E1]

Prerequisite: Formal work on Nexus or other public media of communication.

Application of social science methodology to investigatory journalism. Study of social factors affecting the nature of news as it finally emerges in the mass media. Maximum of four units only from Sociology 119A—B—C will count toward the 36 Upper Division units for the major.

120 • The Community (4) Appelbaum, Molotch, Nee

[E1] *Prerequisite: Consent of instructor. Recommended: Economics 1 and 2 or 109.*

Structure and dynamics of the local community. Comparative and historical analysis of rural, urban, and suburban communities and neighborhoods. Study of organizations, power structure, status groupings, communication processes, socialization, factional conflict, social control, ecology, equilibrium, and change.

121 • Environment and Society (4) Molotch [E1]

Impact of social institutions on human-environment relations. Cultural conceptions of human-environment links. The present crisis and possible future.

122 • Social Stratification (4) Bielby [E1]

Prerequisites: Sociology 1, 2, 3.
The nature of social classes and class relations, emphasizing contemporary studies of American society.

122Q • Social Stratification in the US: Intermediate Level (4) Bielby [E1]

Prerequisite: Sociology 122 or equivalent.
The interrelationships of economic, social, cultural, and political inequality in the United States, and the transmission of inequality from parents to children.

123 • Population (4) Billigmeier, Straits [E1]

Population composition and change; differential fertility and mortality of sociocultural groups; internal and international migration; population theory and national policies; problems in areas of population pressure.

124 • Collective Behavior (4) Shibutani [E1]

Analysis of the expressive component of social life; critical evaluation of theories of crowd be-

havior; the political manipulation of emotional phenomena.

125 • Intercultural Studies in Community Milieu Abroad (4) Billigmeier [E1]

Perceptions of differences in culture and social institutions. Contexts of contact: of the sojourner, foreign student, alien worker, immigrant, and scholar abroad. Intensive study of acculturation.

126 • Urban Society (4) Applebaum [E1]

The social systems of modern urban society.

126R • Selected Topics in Urban Sociology (4) Friedland [E1]

Prerequisite: Sociology 126 or consent of instructor.

This course is designed to analyze selected urban policies in depth. Attention will be paid to the interaction between political, economic, and sociological processes. Different policies and different countries will be covered each time the course is offered. May be repeated twice.

127 • Sociology of Urban Planning and Design (4) Appelbaum [E1]

Prerequisite: Sociology 126 or consent of instructor.

Survey of sociological implications of city planning and urban design processes.

128 • Inter-Ethnic Relations (4) Billigmeier [E1]

Patterns of racial and ethnic relations, with particular emphasis upon minorities in the United States.

128Q • Ethnicity, Nationalism and Ethnonationalist Movements in the Modern World (4) Billigmeier [E-1]

An examination of the significance of ethnic, regional, and nationalist movements in Europe and the Middle East and the resurgence of organized efforts by minorities to attain a broader recognition of their rights or either autonomy or secession. Consideration is given both to the historical background and the contemporary social and political consequences of these movements.

129 • Sociology of International Politics (4) [E1]

Domestic social factors and national foreign policy; relation of public attitudes to foreign policy and the place of public opinion in the process of foreign policy formulation; effect of the international situation on domestic structure of society.

130 • Comparative Social Development and Change (4) [E1]

Prerequisites: Sociology 1, 2, 3.
Theories of social change and the evolution of social systems.

131 • Political Sociology (4) Flacks [E1]

Social and cultural bases of the political process; the study of power and authority as reflecting the interplay of interests and values; analysis of continuities and discontinuities in the democratic political system.

131R • Sociology of the Modern State (4) Friedland [E1]

Prerequisite: Sociology 131 or the consent of the instructor.

This course will study the historical formation, organizational structure, and political processes

of the modern state in the United States and Western Europe. Topics will include: state building and the formation of a national policy; the relationship between bureaucracies, representative institutions, and the market economy; the organization of political power and the determination of public policy. The state will be studied as a representative institution, as a mode of domination, and as an institutional locus of societal contradictions. Each view will be examined in light of empirical studies of contemporary and historical states.

132 • Public Opinion (4) Gold [E1]

Conceptual analysis of public opinion in relation to notions of democratic behavior and social change. Problems of measurement. Influence of the mass media, reference groups, and interpersonal relations. Effect upon contemporary American society.

133 • Sociology of Mass Communications (4) Gold, Molotch [E1]

Organization and processes of mass communications in American society and developing nations; effects of the mass media on social consensus, conflict and innovation.

134 • Social Movements (4) Flacks [E1]

Developmental processes of movements seeking alterations in the social order; a comparative analysis of utopias, classical and contemporary liberalism, socialism, and communism.

135 • Sociology of Knowledge (4) Appelbaum, Wilson [E1]

The creation, diffusion, and social influence of knowledge; thought forms and symbols as consensus-making devices; the social role of the intellectual.

136 • The Analysis of Conversational Interaction (4) Zimmerman [E1]

Prerequisites: Upper Division standing or consent of instructor.

The analysis of naturally occurring conversations with an emphasis on understanding conversation as a form of social interaction. The course will relate the structures of conversational interaction to such issues as inter-personal power, dominance and submission, sexism, and stereotyping as well as exploring the relevance of this approach to classical sociological concerns.

136Q • Special Studies in Conversational Interaction (4) Zimmerman [E1]

Prerequisites: Sociology 136 and consent of instructor.

Individual and group projects in the analysis of conversational interaction stressing the understanding of this approach through actual research.

137 • Sociology of Black Nationalism (4) Fisher [E1]

Analysis of the historical and sociological sources of Black Nationalism with special emphasis on the implications of Black Nationalism for radical social change.

138 • The Sociology of Conflict (4) Friedell [E1]

Conflict as a basic and continuous social process; relationships to social change and social organization; modes of resolving differences.

139A—B • The Sociology of Black-White Relations (4-4) Fisher [E1]

Prerequisites: Sociology 1 or equivalent, students taking 139B must have taken 139A; or consent of instructor. Sociology 139B is designed to supplement 139A.

Selected problems of racism will be the focus of both theoretical (A) and empirical (B) study. This course will be an integral part of reassessment, reevaluation and change in patterns of racist super-subordination.

140 • Aging in American Society (4) [E1]

Prerequisite: Upper division standing and a socialization or developmental psychology course or personal experience working with the elderly.

This course will survey and analyze aspects of growing old in American society. Attention is focussed on the meaning of aging to the individual as topics including physical and mental health, retirement, leisure, sexuality, death, and dying are discussed.

141 • Interpersonal Relations (4) Friedell, Schulman [E1]

Prerequisite: Sociology 2 or Psychology 102, their equivalent, or consent of instructor.

The social psychology of person-to-person interaction: perceptions, norms, and sentiments that develop in face-to-face contact.

142 • Socialization (4) Baldwin [E1]

The learning of culture by children: analysis of children's games, of speech, and of child-parent interaction.

142H • Honors Seminar in Socialization (4) Baldwin [E1]

Prerequisites: An "A" in Sociology 142 and consent of instructor.

Advanced study in socialization for a selected group of students.

143 • Small Groups (4) Shulman [E1]

Prerequisite: Sociology 2, Psychology 1 or 101, Sociology 141 or Psychology 102; or consent of instructor.

The structure and dynamics of small groups including the analysis of roles, interpersonal relations, and group characteristics; intergroup relations; field and laboratory research on small groups.

144 • The Chicano Community (4) [E2]

Origins of the Mexican-American immigrant in rural Mexico; context of contact; patterns of settlement in the United States; the Mexican community; social structure and social change; acculturation and generational patterns; community leadership and change. Same as Chicano Studies 144.

145 • Adult Socialization (4) [E1]

Prerequisite: Sociology 142.

The social development of individuals after the early childhood years. Data and theories will be presented relating to the development of the more complex social behaviors, cognitions, plans, etc. typical of socialized adults.

146 • Special Topics in Sociology (1-4) [E1 if 3 or more units]

Lectures in special areas of interest in contemporary sociology. Specific course titles to be announced by the department each quarter. No more than eight units of major credit will be given,

en, but course may be repeated up to a 16 unit maximum.

147 • Current Issues in Social Psychology (4) Scheff [E1]

Prerequisites: Sociology 2 and 103, their equivalents or consent of instructor.

An advanced course dealing with topics selected by the lecturer. Emphasis is on areas of research in social psychology, such as the decision-making process, role analysis, and other current topics. Course may be repeated once if there is a different instructor.

148A • The Analysis of Social Settings (4) [E1]

Prerequisites: Sociology 1 and 2.

The properties and interactive processes of social settings with emphasis on theories of the social organization of natural settings and methods for studying them.

148B • The Analysis of Social Settings (4) [E1]

Prerequisites: Sociology 1, 2, 148A, or consent of instructor.

Field methods for collecting and analyzing data on naturally occurring behavior and natural social settings; direct and indirect methods of observation. Students will actually engage in one or more field studies.

149 • Introduction to Ethnomethodology (4) Zimmerman [E1]

The course explores the ways in which people, through their practical commonplace activities, produce for themselves and for others a meaningful social world. We will look at the ways in which social settings are created by participants, at the role of conversation and descriptions in creating a sense of social structure, and at the interdependence between what we see "out there" and how we see it.

150 • Principles of Social Welfare (4) [E1]

Basic concepts and methods of social work; the application of casework techniques; structure and function of public welfare agencies, social group work and community organizations.

151 • Images of Women in Film (4) Huber [C]

This course will examine the changing role and image of women in film from the 1930's to the present. Films by representative American and European directors will be shown.

152 • Sociology of Human Sexuality (4) Baldwin [E1]

Human sexuality as a social phenomena; the influence of anatomy, physiology and psychosexual development on sexual expression; masculinity and femininity in their social expression; theories of sexuality related to deviance.

152H • Advanced Study in the Sociology of Human Sexuality (4) Baldwin [E1]

Prerequisites: Completion of Sociology 152 with "A" or better, and permission of instructor.

An honors seminar for advanced study in the sociology of human sexuality. Each student will research one to four topics in the field of sexuality and will present four 40-minute summaries of that research.

153 • Women and Work (4) Berk, S. [E1]

Prerequisites: Upper division status, any upper division Sociology course.

The course will begin with readings and discussion of the sociological features of work in society. The role of women in the labor market will be explored, as well as their lives as unpaid workers in their own homes. Finally, more global issues of sexual inequality and social change will be discussed.

154 • Sociology of the Family (4) [E1]

The human family, past and present; adjustment in the contemporary American family.

155A • Women in American Society (4) Berk, S.; Huber [E1]

Prerequisite: Upper Division standing.

The roles and life styles of women in various American subcultures and the ideologies developing around them.

155B • Sociological Perspectives on Women (2-4) Berk, S.; Huber [E1 if 3 or more units]

Prerequisite: Sociology 155A, or permission of instructor.

Students will undertake specific research projects aimed at elucidating the position of women in contemporary society. Various projects would include: The status of women in various social classes, in the labor force, in social institutions, etc.

156 • Current Issues in Demography (4) Straits [E1]

Prerequisite: Sociology 3. Sociology 123 is recommended.

Lectures and readings on several current population issues, such as income, aspirations, and fertility; migration of the poor; consequences of childbearing and childspacing patterns; inequalities of death and illness; overpopulation; teenage pregnancy; and immigration policies. Content varies from year to year. May be repeated twice.

157 • Radicalism in American Life (4) Flacks [E1]

Prerequisites: Sociology 131, 134.

An analysis of the social sources and impacts of radical ideologies and organizations on American life and politics in the Twentieth Century.

158 • Personal Identity (4) Shibutani [E1]

A sociological approach to motivation; the formation of self-concepts, self-regulation as a social process.

159 • Occupations and Professions in Modern Society (4) [E1]

A sociological analysis of the character and function of various occupations and professions in contemporary society. Emphasis is placed upon current sociological theory and research in this area of sociological inquiry.

160 • Social Relations in the Workplace (4) [E1]

Management and worker organizations, formal and informal. Accommodation among these organizations, and interaction between them and the community.

161 • Sociology of People's Republic of China (4) Nee [E1]

Prerequisite: Sociology 1 or 101.

The course will deal primarily with China after the 1949 revolution. The major emphasis will be on the social and political institutions in the People's Republic of China.

164 • Sociology of Education (4) [E1]

Changing character of education in complex societies, its relation to political, economic and technological institutions, and its effect on individual and community behavior and development.

166A • Approaches to the Future (4) Huber [E1]

Prerequisite: Upper Division standing.

Overview of major methods being employed to systematically investigate and project future social trends and characteristics. Both exploratory and normative approaches are considered, with special attention given to the latter.

166B • Approaches to the Future (4) Huber [E1]

Prerequisite: Sociology 166A.

Research seminar dealing with possibilities for realizing various long-range social goals. Focusing on specific areas, students investigate prospects for goal realization in light of likely future trends, as well as exploring means of implementing desired ends.

167 • The Structure and Dynamics of Organizations (4) Friedland, Sonquist [E1]

Prerequisites: Sociology 1, 2, 3.

Institutional analysis of administrative structures and voluntary associations: informal organization, ideology, bureaucracy, decision-making, and morale.

168 • Science and Humanism (4) Baldwin [E1]

Modern man is highly dependent on science. How does science shape our society, our values, our behaviors, our survival? Are the influences humane? We will investigate modern trends in humanistic and scientific values and how these values affect our lives.

170 • Sociology of Deviant Behavior (4) Berk, S. [E1]

Prerequisites: Sociology 1, 2, 3.

Introduction to the sociological study of conformity and deviance, with emphasis on processes of social control.

171 • Sociology of Mental Illness (4) Scheff [E1]

Prerequisite: Sociology 170. Recommended: Abnormal Psychology (Psychology 103).

Sociological analysis of mental disorder: the cultural context of health and illness, social processes in the definition, recognition and treatment of mental illness.

172 • Sociology of Crime and Delinquency (4) Cressey [E1]

Theories of the genesis of delinquency and crime; factors in the organization of delinquent and criminal behavior from the points of view of the person and group; delinquent and criminal behavior systems.

173 • Sociology of Law (4) Berk, R., Cressey [E1]

Study of the social and cultural factors underlying the development, maintenance and change

of legal structures and processes, and analysis of theories of jurisprudence.

174 • Criminal Justice and the Community (4) Berk, R., Cressey [E1]

Prerequisite: Sociology 1.

Sociological analysis of law-enforcement systems and court systems; police discretion, differential implementation of the criminal law; negotiation in criminal justice decisions.

175 • Sociology of Punishments and Corrections (4) Cressey [E1]

Theories of punishment and treatment used in dealing with convicts and juvenile delinquents; analysis of the systems of behavior modification used by probation, prison and parole workers.

180A—B • Critical Perspectives on Industrial Society (4-4) Appelbaum [E1]

A • From Social Philosophy to Marx

The foundations of critical theory, its relationship to early social science, and to social changes in the 19th century. Thorough examination of dialectics as the basis for both structural and critical analysis.

B • Post-Marxian Critical and Structural Theory.

Prerequisite: 180A.

The central focus will be on theoretical issues in contemporary society, for example: the problem of ideology; the problem of rationality; the role of science and technology in contemporary ideology and social development.

183A—B—C • Socialization and Personal Change (4-4-4) Fisher [E1]

Prerequisites: Sociology 1 and some acquaintance with group process theory and/or practice.

This course deals with the effects of socialization on values and behavior with special reference to problems of race, gender, and social class. The course is designed to enable students to understand and reassess their values and practices in terms of theories of socialization and group process. (A.) The focus here will be on mastery of theoretical material on socialization and a format for further work. Selected literatures on socialization and its impact on the person will be stressed. (B.) The emphasis this quarter will be on identification of distinctive elements in the socialization history of each class member. (C.) During this quarter we will explore methods of bringing about change in values and behaviors with special emphasis on those typified as "racist," "sexist," or "exploitative."

184 • Sociology of the New Therapies (4) Fisher [E1]

Provides a description of several new approaches to mental health which includes their history, dynamics, and effectiveness. Will include an analysis of the social and intellectual sources of these new approaches.

185 • Development of Sociological Thought (4) Appelbaum [E1]

Prerequisites: Sociology 1, 2, 3.

The outstanding European and American figures and idea systems in the development of sociological thought.

190A—B • Workshop in Organizational Studies (4-4) [E1]

Prerequisite: Consent of instructor.

Both the methods of study and key theoretical issues in organizational studies will be focused upon. Students will engage in first-hand observation of some organization and write a paper based on their experience.

191A • Field Projects in Community Development and Social Service (1-4)

Prerequisites: Sociology 1 and permission of instructor.

The problems, dilemmas and potentialities of service institutions (both established and alternative), the "helping professions" and voluntary organizations are explored through direct participation and observation in specific community settings. May be taken only P/NP. A maximum of 6 units of 191A,C,D,E combined may be applied towards degree requirements, and only 4 units of these may be applied towards the Sociology major.

191B • Seminar in Community Development and Social Service (4)

Prerequisites: Sociology 191A; permission of instructor.

Systematic exploration of the problems of institutional and community development, of the dilemmas of social service institutions and helping occupations, of the potentialities and constraints on the creation of social and cultural alternatives. Open only to students with concrete field work experiences.

191C—D—E • Field Placement in the Helping Professions (1-1-1)

Prerequisites: Sociology 1 and consent of the instructor and the department chairperson. These courses must be taken in sequence and 191C and 191E may be repeated for credit provided the subject content is different. A maximum of 6 units of 191A,C,D,E combined may be applied towards degree requirements, and only 4 units of these may be applied towards the Sociology major.

This course sequence is designed to provide students with an ongoing opportunity to combine theory and communication skills with field placement in the helping professions. These courses are offered in conjunction with the Student Health Service and may be taken *pass/no pass only*.

191C: Sociological aspects of health-related topics such as nutrition, sexuality, and stress as they relate to the helping professions will be discussed. Attendance at lectures, completion of reading assignments, and a written report are required for a Pass.

191D: Investigation of the problems, dilemmas, and potentialities of combining theory and communication skills to the helping professions setting. Students will be required to complete a written report.

191E: Systematic exploration of the application of theory and communication skills to the helping professions. Students will be required to keep a daily journal and complete a written report.

192 • Projects in Computer Science (4) Sonquist

Prerequisite: Consent of instructor.

Projects in Computer Science for advanced undergraduate students. May be repeated for credit with consent of instructor but with the limit of 12 units for the three courses, total Mathemat-

ics 192, EE CS 192 and Sociology 192 combined.

193 • Senior Seminar (4) Staff

Prerequisites: Permission of instructor. Open only to Sociology majors who have completed 20 or more units of Upper Division course work in the major.

A seminar intended to represent a culminating experience for majors. The focus will be on a topic or theme that permits intensive analysis of methods and problems of social inquiry. Topics will vary with the instructor.

194 • Group Studies for Advanced Students (2-5) Staff

Intensive study and research. This course may be taken for no more than three quarters and for a maximum of five units each quarter. Enrollment normally limited to 12 or fewer students.

*198 • Readings in Sociology (1-5) Staff

Prerequisites: At least junior standing with a B average in previous college work. Students may apply a maximum of 12 units 198-199 combined to the Sociology major.

Readings in Sociology under the guidance of a faculty member in the Department. Students wishing to enroll should prepare a short plan of study.

*199 • Independent Studies in Sociology (1-5) Staff

Prerequisites: At least junior status with a B average in previous college work. Students may apply a maximum of 12 units 198/199 combined to the Sociology major.

Independent studies in Sociology under the guidance of a faculty member in the department. Students wishing to enroll should prepare a short plan of study.

*See N2 for 198/199 independent studies unit limitations.

Graduate courses

200A—B—C • Sociological Theory (4-4-4) Appelbaum, Wilson

Central currents of sociological theory, beginning with Marx, Durkheim, and Weber, and continuing into contemporary theoretical issues.

201A—B—C • Advanced Research Methods (4-4-4) Shulman, Sonquist

Prerequisites: Sociology 103 and 104A—B or equivalent.

Sociology 201A provides advanced training in survey techniques; 201B is concerned with experimental methods; and 201C is devoted to methods for collecting and analyzing data on naturally occurring behavior.

202 • Issues in Sociological Inquiry (4) Gold

Prerequisite: Sociology 103.

Currently relevant issues which fall somewhere between those systematically treated in the philosophy of science and those systematically treated in courses dealing with problems of theory construction and research design.

203A—B—C • Theory and Method in Sociology (4-4-4) Berk, R.

Prerequisites: Sociology 103, or consent of instructor.

A three-quarter seminar in which the relationships between sociology and other social sciences are considered in the context of particular substantive issues: crime, marriage and divorces, unemployment, underdevelopment, and the like. A paper will be required integrating the issues discussed.

204A—B • Advanced Statistics (4-4) Berk, Bielby, Gold

Prerequisites: Sociology 103, 104A—B; or equivalent.

204C • Topics in Advanced Data Analysis (4)

This seminar will deal with topics of current interest in the area of data analysis and will give participants "hands on" experience in using the new techniques with real data. Participants will analyze data of their choosing and will write up the results in journal article form. Technical assistance and some data archives will be provided by the Sociology Computing Facility. The course may be repeated twice providing the titles are different.

205A—B—C • Data Analysis in Sociology (4-4-4) Berk, R.; Bielby; Wilson

Prerequisites: Soc 44 or equivalent; 205A is prerequisite to 205B, and 205B is prerequisite to 205C.

A: Bivariate and multiple regression under ordinary least-squares assumptions; descriptive properties; properties of estimators; statistical inference. Students are required to attend lectures in Soc 104A.

B: Sociological applications of ordinary and generalized least-squares. Practical use stressed through exercises with actual sociological data. Students required to attend lectures in Soc 104B.

C: Application of multiple-equation models to sociological data and advanced topics in single-equation and interpretation models. Emphasis in exercises on analysis of actual sociological data. Students required to attend lectures in Soc 104C.

206 • Intermediate Methods of Sociological Research (4) Straits

Prerequisite: Sociology 3 or equivalent.

Review of fundamentals of designing, conducting, and analyzing social surveys. Problems of design and interpretation in experimental and observational studies will be discussed. Students will be required to attend lectures in Sociology 103.

208 • Formal Analysis in Sociology (4) Staff

Prerequisite: Philosophy 31, or consent of instructor.

Clarification of existing sociological theories by resolution into explicit form. Special attention to axiomatic method.

209A—B—C • Evaluation Research Practicum (4) Berk

Prerequisite: This course assumes a working knowledge of multivariate statistics and research design at about the level taught in the first year of graduate social science programs.

An interdisciplinary research practicum in

which students undertake actual evaluations of social programs. Each year the class selects a subset of projects from those the instructor or the students have been able to generate and by the end of the academic year, produce research reports made available to interested practitioners.

210 • Seminar in Ethnomethodology (4) Zimmerman

The study of the properties making up every day practical reasoning.

220A—B—C • Origins and Development of Critical Sociology (4-4-4) Flacks, Appelbaum

This three-quarter sequence would introduce graduate students to critical sociology. The first quarter would focus on Marx's early works and philosophic issues; the second would focus on Marx's political sociology and theory of the state; and the third quarter would cover political economy and neo-Marxist theory generally.

222 • Social Stratification (4) Staff

224 • Seminar in Collective Behavior (4)

226A—B • Human Ecology (4-4) Friedland, Molotch

Prerequisites: Graduate standing or consent of instructor.

This two-quarter sequence is designed to provide a comprehensive examination of issues relating to urban settlement as a locus of production and consumption patterns. Approaches include the classic formulations of urban ecology and locational theory and more contemporary derivations as currently practiced in urban geography, economics, and sociology. The first quarter is designed primarily for explication and review. The second quarter is organized around presentations by students and faculty on specific topics which serve as the basis of term papers, dissertation projects, and on-going faculty research.

228A—B • Selected Problems in American Racism (4-4) Billigmeier, Fisher

A • Racism in the United States as a social institution. Primary emphasis will be given to theoretical treatments of racism, and to locations within social structure wherein theoretical claims can be assessed. The relevance of theoretical claims, and analysis derived therefrom, for action and for policy imperatives, will be emphasized. **B • Field explorations and research.** It is expected that each student will come to the seminar with an area of interest in the study of racism formulated and will evolve a theoretical viewpoint within which to articulate this interest. The major work of the seminar will be the development and implementation of a theoretically relevant research design and a write-up which includes presentation, analysis, and criticism of results.

229 • Race (Ethnicity) and the Political Process: A Practicum (4) Fisher

Sociological aspects of the political process and political participation by racial (ethnic) minorities in the United States. The degree and kind of involvement in the political process, as well as the consequences of this, will be explored. Emphasis will be given to field experience and its analytic meaning.

230 • Seminar in Social Change (4) Staff

Recent theories of sociocultural dynamics and

change, with special emphasis on modern systems theory and cybernetic principles as they apply to social change.

231 • Seminar in Political Sociology (4) Flacks, Friedland

232 • Public Opinion and Mass Communication (4) Gold
Selected topics in sociological analysis of public opinion and mass communication.

239 • Sociology of Law (4) Staff
Selected topics in the sociological analysis of legal structures and processes, and of theories of jurisprudence.

240 • Pragmatism and American Sociology (4) Shibutani
Analysis of the theoretical and methodological presuppositions underlying use of the process model in American sociology.

241 • Seminar in Interpersonal Relations (4) Scheff

242 • Seminar in Language and Social Interaction (4) Zimmerman
Prerequisite: Sociology 136 or consent of instructor.
The seminar will explore selected topics in the analysis of naturally occurring conversation with an emphasis on conversational exchange as a form of social interaction.

243 • Practicum in Social Psychology (4) Gold, Scheff

254 • The Family (4) Staff

255 • Sociological Perspectives on Women (4) Berk, Huber, Patterson

This course will analyze the social, cultural, and economic roots of the inequality of women. It will also examine how change in female roles and position is related to institutional change (a cause and effect).

257 • Theories of Religious Behavior (4) Staff

264 • Sociology of Education: Seminar (4) Staff
The relationship of education to the political, economic and technological institutions. The study of schools and universities as complex organizations and of teaching, both in the school and university, as a profession.

265 • Seminar in Sociology of Medicine (4) Scheff

267 • Seminar in Complex Organizations (4) Staff

270 • Deviant Behavior (4) Scheff

271 • Sociological Analysis of the Therapeutic Process (4) Fisher
Prerequisites: Some acquaintance with the writings and life of Sigmund Freud and/or one or more of the newer "therapies," plus some work in Sociology.

Exploration of some social and philosophical issues entailed in the idea of treatment or therapy, and a consequent recasting of some traditional sociological ideas such as anomie, alienation, etc. Examination of the meanings of the therapeutic process as a social ethic.

272 • Seminar in Criminology (4) Cressey
Selected topics in the sociology of crime, delinquency, criminal justice, and corrections.

285A—B • Central Themes in Classical American Sociology (4) Molotch

The course will focus upon central issues and themes in traditional American sociology. Areas to be explored are: demography, human ecology and urban sociology, complex organizations, sociology of law and criminology, deviance, sociology of religion, marriage and family, collective behavior, political sociology and social stratification and social psychology.

Advanced graduate study and research courses

594 • Special Topics (2-5) Staff
Special seminar on research subjects of current interest. May be repeated for credit on approval of department chairperson.

595 • Group Studies (4) Staff
Critical review of research in selected fields. May be repeated for credit on approval of department chairperson.

596 • Directed Reading and Research (2-5) Staff
Individual tutorial. Plan of study must be approved by department chairperson. May be repeated for credit on approval of department chairperson. No more than half the graduate units required for the M.A. may be taken in Sociology 596.

597 • Individual Study for M.A. and Ph.D. Examinations (4-8) Staff
Normally taken with the student's committee chairperson. Units do not count toward graduate degrees. Maximum of 24 units per examination.

599 • Ph.D. Dissertation Preparation (2-6) Staff
Normally taken with the student's committee chairperson. Maximum of 12 units total.

Spanish and Portuguese

Professors

Carlos Garcia Barrón, Ph.D., *UC Los Angeles; 18th and 19th-century Spanish literature.*

³David Bary, Ph.D., *UC Berkeley; 20th-century Spanish and Spanish-American literature.*

¹Enrique Martínez-López, Ph.D., *University of Madrid; 16th and 17th-century Spanish literature; Brazilian colonial literature.*

Allen W. Phillips, Ph.D., *University of Michigan; Modern Spanish and Spanish-American literature.*

⁴Winston A. Reynolds, Ph.D., *University of Southern California; Golden Age Spanish literature; colonial Mexican literature.*

Associate Professors

³Carlos H. Albarracin-Sarmiento, P.L., *University of La Plata; Spanish-American literature; literary theory.*

¹Victor F. Fuentes, Ph.D., *New York University; 19th and 20th-century Spanish literature and contemporary Latin-American drama and poetry.*

Marta Gallo, P.L., *University of Buenos Aires; contemporary Spanish-American fiction; linguistics.*

Mireya Jaimes-Freyre, Ph.D., *Columbia University; Spanish-American literature; Modernism; Black and social poetry.*

Giorgio Perissinotto, Ph.D., *Columbia University; Hispanic linguistics; medieval literature; phonology, dialectology, bilingualism, sociolinguistics.*

Harvey L. Sharrer, Ph.D., *UC Los Angeles; medieval Hispanic languages and literature; comparative medieval literature (Chairperson).*

Frederick G. Williams, Ph.D., *University of Wisconsin; Portuguese, Brazilian and Spanish-American literature.*

Assistant Professors

Mary Gay Doman, Ph.D., *University of Wisconsin; Hispanic linguistics, applied linguistics, morphology and syntax.*

Francisco A. Lomeli, Ph.D., *University of New Mexico; Spanish-American literature; Spanish language.*

Lecturer

Nélida López, B.A., *Instituto Superior del Profesorado, Buenos Aires; Language teaching methodology, applied linguistics, translation*

Visiting Lecturers

Alexandre Rainof, Ph.D., *University of Michigan; translation/interpretation.*

Nancy Yaqub, B.A., *UC Berkeley; Spanish language.*

Professors Emeriti

José Luis L. Aranguren, Ph.D., *University of Madrid.*

Pablo Avila, Ph.D., *Stanford University.*

Eda Ramelli, Doctora en Letras, *National University of Mexico.*

Lecturer Emeritus

Robert E. Wilson, M.A., *University of Arizona.*

¹Absent on Leave Fall

²Absent on Leave Winter

³Absent on Leave Spring

⁴Absent all year

Concerns of the department

The Department of Spanish and Portuguese offers undergraduates an opportunity to master the four fundamental skills—speaking, understanding, reading, and writing—of the Spanish and Portuguese languages, and to study, through the medium of the languages, the literary, cultural, and linguistic heritages of the Spanish and Portuguese-speaking peoples. It offers the B.A. degree in Spanish and in Portuguese.

M.A. candidates may specialize 1) in Hispanic Language and Culture; 2) in Spanish and Spanish-American Literature; 3) in Hispanic Linguistics or Studies in Bilingualism, and 4) in Hispanic and Portuguese and Brazilian Literatures. The Ph.D. program prepares students for research and university teaching in Hispanic Literature or Hispanic Linguistics, with emphasis in either Spanish or Portuguese.

Departmental Advising and Publications

Students interested in a Spanish or Portuguese major may meet with the department chairperson and advisers on the first day of each quarter (see Schedule of Classes for time and place). Each class level is assigned a senior faculty member as an adviser. Resource persons in the departmental office also can advise on major requirements. Lists of these requirements are available in the Department Office. The Department also prepares a brochure with descriptions provided by each faculty member of courses offered in the coming quarter. This brochure is usually available a month before the quarter begins.

Bachelor of Arts—Spanish

Preparation for the major

Required:

Spanish **1,2,3,4,5, (or 14), 6 • Elementary and Intermediate Spanish**

(Spanish 6 may be taken prior to or concurrently with Spanish 25.)

Spanish **25 • Advanced Spanish**

History **108A—B • Comparative History of the Americas** (which fulfills the State requirement in American History and Institutions). Students who have already met the American History and Institutions requirement may substitute for History 108A—B a two-quarter sequence chosen from among:

History **150A—B • Spain and Spanish Empire**

History **151A—B—C • Hispanic-American History**

History **153 • Comparative Seaborne Empires, 1415-1824**

History **154A—B • Portugal Overseas**

History **155A—B • History of Portugal**

History **156A—B • History of Mexico**

History **157A—B • History of Brazil**

History **158 • History of Inter-American Relations**

History **168A—B • History of the Chicanos**

or may take one quarter of History 108A—B followed by one quarter from the History courses above.

Students who wish to make Spanish their major subject must have maintained an average grade of at least "C" in the Spanish courses taken prior to their junior year. Students transferring from other institutions may be tested by examination.

Those planning to pursue graduate work in Spanish with emphasis on linguistics and philology are advised to take a minimum of two quarters of college Latin or its equivalent.

Native speakers of Spanish will not be permitted to enroll in any Spanish courses lower than 25. The Department defines "native speakers" as persons who took their primary and secondary schooling in a Spanish-speaking country. Because of the highly sequential nature of lower division language courses 1-6 students who have received in one of these courses a grade lower than "C," are urged not to continue to the next higher course. Instead they should repeat the course for no credit or provide themselves with a tutor to prepare them for the next course.

Upper Division major

All upper division and graduate courses (with a few specific exceptions) are given in Spanish. Spanish 25 or equivalent is prerequisite to all upper division courses given in Spanish.

Required: 40 upper division units, of which 16 must be in Spanish **100 • Introduction to Hispanic Linguistics**

Spanish **110A—B • Survey of Spanish Literature**

Spanish **111A • Survey of Spanish-American Literature**

Eight of the remaining units may be selected from Luso-Brazilian literature, Portuguese 128, Spanish 126 and 127 (film courses), or Comparative Literature Courses in which Peninsular or Latin American literature is studied. A maximum of 4 units of Spanish 128A—B may be applied to the UD major (P/NP only).

NOTE: Spanish 100 or the equivalent is prerequisite for all Spanish linguistics courses.

Students are advised to seek a broad, rather than specialized, preparation in which the areas of language, linguistics, Peninsular and Spanish-American culture and literatures have a balanced representation.

Bachelor of Arts—Portuguese

Preparation for the major

Required: Portuguese **1, 2, 3, 4, 5, 6** or equivalent, to be tested by examination *and* two quarters from the following: History **108A—B • Comparative History of the Americas** (which fulfills the State requirement in American History and Institutions)

History **153 • Comparative Seaborne Empires, 1415-1824**

History **154A—B • Portugal Overseas**

History **155A—B • History of Portugal**

History **157A—B • History of Brazil**

History **157C • Intellectual History of Brazil: Modern Period**

Portuguese 8A—B—C is strongly recommended.

Students who wish to make Portuguese their major subject must have maintained at least an average grade of "C" in the college courses in Portuguese taken prior to their junior year. Students transferring from other institutions may be tested by examination.

Upper Division major

Required: 40 upper division units are required, including 105A—B—C and 106A—B—C. The remaining units must be divided among other Portuguese courses in the 100 series. 114, 115, 120, 125A—B and 128 may be accepted toward the unit requirement, with the stipulation that readings for the major student be in the Portuguese language.

Students may substitute eight upper division units in Spanish or Spanish-American literature, Spanish, 126, 127 (film courses), Comparative Literature courses in which Hispanic, Portuguese or Brazilian literature is studied, or Portuguese and Brazilian history, with the approval of the Department.

Portuguese Summer Institute

Each summer the Department offers a full range of courses in Portuguese studies through the Portuguese Summer Institute. Since its inception in 1973 the Summer Institute has proven to be among the most comprehensive programs of its type in the United States. The institute offers courses ranging from beginning intensive Portuguese to upper division courses in language, culture and Luso-Brazilian literatures, including the literature of the Azores. Participants have the opportunity of residing in a Language House that provides special lectures, conversation hours, informal gatherings and in general, enlarges their understanding of the cultures of the Portuguese-speaking countries.

Anyone who is genuinely interested in studying Portuguese is encouraged to apply. Scholarships are available to qualified applicants, and further information may be obtained from the Department of Spanish and Portuguese, University of California, Santa Barbara.

Translator-Interpreter Certificate in Spanish

1. B.A. degree from an accredited institution.

2. A major in Spanish or 24 upper division units in Spanish.
3. An academic year at a university in a Spanish-speaking country, or extensive work experience using Spanish (including military service), or bilingual facility in Spanish. (Note: Requirements 2 and 3 may be waived in special cases.)

The student must complete a minimum of 34 units of graduate and upper division courses.

This program is a one-year, postgraduate program consisting of a sequence of five specialized courses (22 units) and three or four elective upper division courses (16-20 units). The specialized courses (Spanish 400-421) are devoted to the techniques and practices of translation and interpretation from Spanish into English and from English into Spanish and, as such, are not suitable for remedial language study. The upper division elective courses allow students to plan individualized programs tailored to their own particular needs and interests. These courses may not normally be applied towards graduate degrees in Spanish literature or linguistics.

Students qualified in both French and Spanish are encouraged to take a combined program.

Upon successfully passing a series of final qualifying examinations, students will receive a certificate attesting to their competency as translators and/or interpreters. The standards for certification must necessarily be high, since the success of the program depends almost entirely upon the demonstrated proficiency of the certificate holders once they have entered upon their careers.

Master of Arts—Spanish

Admission Requirements and Prerequisites

Students planning to take the M.A. in Spanish will need Spanish 110C (Survey of Spanish literature, 18-20th centuries), 111B (Survey of Spanish-American Literature, from Modernism to the present), and 124A (Theory and analysis of literature). Strongly recommended: Spanish 121A—B (History of Spanish and Portuguese Languages), Spanish 122A—B (Medieval Spanish Literature), and either 131A—B (Golden Age Poetry), 134 (Golden Age Novel) or 137A—B (Golden Age Drama).

In addition to fulfilling the general requirements for admission to graduate status, the department requires an undergraduate major in Spanish or its equivalent. Before admission to the M.A. program in Spanish, all applicants are required to take the Advanced Test in Spanish of the Graduate Record Examination. Test applications may be obtained from the Educational Testing Service, Box 955-R, Princeton, New Jersey 08540, or from the Graduate Division, University of California, Santa Barbara, California 93106.

International applicants must also submit TOEFL (Test of English as a Foreign Language) scores to the Graduate Division.

Candidates who are deficient in preparation will take the necessary undergraduate courses to make up the deficiency before beginning work in the M.A. program. At the end of the first year of study candidates' work will be evaluated. Those who are not making satisfactory progress toward the degree may be advised to drop out of the program.

Degree Requirements

Candidates for the M.A. in Spanish will follow one of the three programs described below. The M.A. degree is awarded according to *Plan II - Comprehensive Examination* in Programs 1 and 2, and according to *Plan I - Thesis* in Program 3.

Program 1—Language and Culture— *Plan II Comprehensive Examination*

This program is designed primarily for students who wish to pursue advanced studies in Spanish and Spanish-American literature, language or another aspects of Hispanic culture, and who do not plan to go on to the Ph.D. in Hispanic literature or linguistics. It emphasizes an interdisciplinary approach with the flexibility to serve the needs of future teachers of Spanish language and culture and of students contemplating careers in which a knowledge in this area would be an asset.

Each student will have an individual course program designed in consultation with the Program Director and approved by the Program Director and the Graduate Committee. Its structure will be determined in part by the nature of the student's study topic in course Spanish 596 (see below).

A minimum of 12 courses is required, at least 6 of which must be in the graduate series.

The student's program may, with the prior approval of the Program Director and the Graduate Committee, include up to 3 upper division or graduate courses from pertinent subjects in Portuguese or in other departments.

The 6 graduate courses will include a sequence of two tutorials (Spanish 596) to be taken during the last two quarters of study. In this sequence the student carries out, *in Spanish*, a study project (approved in advance by the Program Director and the Graduate Committee), the results of which are presented both in a written paper and an oral presentation before a department committee. The topic of study may be any aspect of Hispanic literature or language, or of Hispanic culture and civilization (including such fields as science, philosophy, pedagogy, history, political science, sociology, art, and law). Fulfillment of this requirement may involve off-campus field work, e.g., at the Mexico City Study Center, or elsewhere, as the topic demands. A departmental committee will examine the candidate (a 2-hour oral examination) on the study project and on a reading list of essential works of Spanish and Spanish-American literature. The nature of the program requires proficiency in written and oral standard Spanish.

Program 2—Literature— *Plan II Comprehensive Examination*

This program is designed primarily for students planning to go on to a Ph.D. in the field of Spanish and Spanish-American literature.

The student must complete a minimum of 11 graduate and upper division courses, of which at least 8 must be in the graduate series. Spanish 121A—B or 122A—B, and 124A—B are required (if not taken previously for the B.A.). Spanish 212A and at least one two-quarter research seminar in literature (which will not substitute as a Ph.D. requirement) are required.

Up to two upper division or graduate courses in Luso-Brazilian literature may count toward the degree.

A reading knowledge of a pertinent language, other than Spanish (Portuguese is acceptable) is required.

The student will prepare an academic program in consultation with the Program Director, who will guide and advise the student until prepared to take the comprehensive examinations. The latter consist of six hours of written examinations based on a departmental reading list and covering all areas of Peninsular and Spanish-American literatures. There is, in addition, an oral examination of approximately one hour's duration.

In order to be accepted to the doctoral program, the student must pass the comprehensive examinations and receive the approval of the Graduate Committee.

Program 3—Linguistics or Studies in Bilingualism — Plan I Thesis

This program is designed primarily for students planning to go on to a Ph.D. with emphasis in either Hispanic linguistics or Spanish-English bilingualism.

The focus on HISPANIC LINGUISTICS provides the student with in-depth knowledge and research skills in synchronic and diachronic linguistics. Topics which can be studied include: Spanish phonological, morphosyntactic and lexical structure; the history of the Spanish language; Spanish semantics; style and dialect variation in the Spanish-speaking world.

STUDIES IN SPANISH-ENGLISH BILINGUALISM deals with the study of the Spanish language in the U.S.A., the bilingual situation of its speakers, and Spanish-English linguistic interaction. Contrastive, sociolinguistic, geographical and historical approaches are followed. This course of study is of particular interest and relevance to instructors and evaluators of bilingual and cross-cultural educational programs, persons wishing to pursue research in Spanish dialectology in the U.S.A., Spanish-speaking social scientists, guidance personnel, and professional and social workers in bilingual communities.

Completion of Spanish 100 (or equivalent) is a prerequisite to entrance into Program 3. In addition, Spanish 107 (Languages in contact) and Spanish 109 (The Spanish Language in the U.S.) (or equivalent) is a prerequisite for students interested in the program with emphasis in Spanish-English bilingualism.

Each student will have an individual course program that will be designed in consultation with the Program Director and approved by the Graduate Committee. Depending upon individual needs, a student's program may, with the prior approval of the Program Director and the Graduate Committee, include courses in Hispanic literature, in Portuguese, or in other related disciplines.

The candidate is expected to complete a minimum of 10 graduate and upper division courses, at least 6 of which must be in the graduate series, including at least one two-quarter research seminar in Hispanic linguistics. Of the 10 courses required, at least 6 must be taken within the Department, including no less than 2 upper division or graduate courses in one area of Hispanic literature. In addition to the course work, the candidate, in consultation with a faculty adviser, will pursue an individual study of a specific topic and will present the results in the form of a short thesis.

A reading knowledge of a pertinent foreign language other than Spanish (Portuguese is acceptable), or compe-

tence in the use of special research methods (e.g., computers or statistics) is required.

Master of Arts—Spanish and Portuguese

Admission Requirements and Prerequisites

In addition to the general requirement for admission to graduate status, students wishing to combine graduate work in Hispanic and Luso-Brazilian literatures should have an undergraduate major in either Spanish or Portuguese, or the equivalent. All applicants are required to take the Advanced Test in Spanish of the Graduate Record Examination. Test applications may be obtained from the Educational Testing Service, Box 955-R, Princeton, New Jersey 08540, or from the Graduate Division, University of California, Santa Barbara, California 93106.

International applicants must also submit TOEFL (Test of English as a Foreign Language) scores to the Graduate Division.

Candidates who are deficient in preparation will take the necessary undergraduate courses to make up the deficiency before beginning work in the M.A. Program. At the end of the first year of study candidates' work will be evaluated. Those who are not making satisfactory progress toward the degree may be advised to drop out of the program.

Degree Requirements

The M.A. degree in Spanish and Portuguese is awarded according to *Plan II - Comprehensive Examination*. The Program is designed primarily for students who wish to acquire a broad background in Hispanic and Luso-Brazilian studies, including those who contemplate subsequent work toward a doctoral degree.

The courses Spanish 25 and Portuguese 4—5—6 (or Portuguese 11), or their equivalent, are prerequisites to entrance into the program.

A minimum of 12 courses is required, at least 8 of which must be in the graduate series. Spanish 121A—B and 124A (if not taken previously for the B.A.) and a reading knowledge of a pertinent foreign language other than Spanish and Portuguese are required.

Each student will have an individual course program designed in consultation with the program director and approved by the Graduate Committee. Its structure will be determined in large part by the nature of the student's interests and long-range goals. However, the student is expected to acquire knowledge of the principal works in Hispanic, Portuguese and Brazilian literatures. The comprehensive examination is based in part on a departmental reading list of important texts in the literatures concerned. It consists of two written tests, each followed by a one-hour oral examination.

Doctor of Philosophy—Hispanic Languages and Literatures

Admission Requirements and Prerequisites

In addition to fulfilling the general requirements for admis-

sion to graduate status, the applicant must satisfy the following departmental requirements:

The student contemplating a doctorate in Hispanic Languages and Literatures will normally follow a course of study leading to the M.A. degree in Spanish under programs 2 or 3 or the M.A. in Spanish and Portuguese (see above). Each M.A. examining committee will make a recommendation to the Graduate Committee regarding the advisability of the student's continuing work toward the Ph.D.

Students applying for the Ph.D. program who possess the M.A. in Spanish or the equivalent training are required to take the Advanced Test in Spanish of the Graduate Record Examination. International applicants must also submit TOEFL (Test of English as a Foreign Language) scores to the Graduate Division. (For more information, see above requirements for the M.A.) Such students must begin making up any course deficiencies during their first quarter of residence. At the end of one or two quarters, their work will be evaluated by the Department, and they may, if necessary, be tested by examination. Only those who receive a favorable report will be permitted to continue working toward admittance to candidacy.

Degree Requirements

Required for the Ph.D. are the following or equivalent courses: Spanish 121A—B (if not taken previously for the B.A. or M.A.), one quarter of 212, and at least one quarter of either 213 or 214. Each student must also take, during the first two years as a doctoral candidate in the Department, a minimum of two two-quarter research seminars (at least one each year) and two one-quarter graduate studies courses (at least one each year). This course work should preferably be related to the student's areas of specialization.

The student will also complete three graduate courses in a minor field with a grade of B or better prior to the qualifying examination. It is expected that most students will minor in another literature (the possibilities include Comparative Literature, French, Italian, Latin, Portuguese and Brazilian studies if the area of primary interest is Spanish and Spanish-American literature, or Spanish and Spanish-American studies if the area of primary interest is Portuguese and Brazilian literature), but an individual with a strong interest and adequate background in another of the humanities, or in an appropriate social science, may minor in one of those fields. In any case, the courses in the minor must bear a demonstrable relation to the student's special interests within the major field of Hispanic literature or linguistics and must be approved by the Department.

Before being admitted to candidacy for the doctorate, the student must demonstrate a good reading knowledge of at least two foreign languages besides Spanish and Portuguese. The choice of languages will depend largely upon the student's individual needs. A general command of Spanish or Portuguese will be assumed in the student, but not formally tested.

By the end of the first or second quarter in the Ph.D. program each student will normally select two areas of specialization (see below), a field of maximum interest (see below), a projected dissertation topic, and a minor. These

decisions shall be made in consultation with the Graduate Adviser and approved by the Graduate Committee. The Graduate Committee will then assign the student an advisory committee to assist in preparing for the qualifying examinations.

The qualifying examinations, which must be passed before advancement to candidacy, will test the student's knowledge in the field of maximum interest and in two areas of specialization selected by the student from among the following: 1) medieval literature and philology, 2) literature of the 16th and 17th centuries, 3) literature of the 18th and 19th centuries, 4) 20th-century literature, 5) Hispanic linguistics. Students whose primary interest is in the Spanish and Spanish-American field will be expected to demonstrate familiarity with Portuguese and Brazilian readings in the area corresponding to their field of primary interest, based on a Department list, or to take certain equivalent courses. A similar requirement in Spanish and Spanish-American topics applies to students whose area of primary interest is in the Luso-Brazilian field. Further information regarding examination procedures may be obtained from the Department.

The field of maximum interest will normally be within the student's two areas of specialization and related to the projected dissertation topic. It may include an individual list of Portuguese and Brazilian or Spanish and Spanish-American readings prepared by the student's advisory committee.

Upon passing the qualifying examinations the student is advanced to candidacy and will thereupon formally select a dissertation topic, in consultation with the advisory committee. Upon approval of the topic and research plan by the advisory committee, a dissertation committee will be appointed, under whose direction the candidate will write a dissertation; upon its successful completion, the degree will be awarded.

Career Opportunities

The Spanish and Portuguese majors provide preparation leading to careers as teachers or scholars and should also be of relevance to persons interested in many other careers in which the knowledge of languages and cultures is useful, as in Foreign Service, foreign trade, journalism, travel service, health services and work with international organizations.

A knowledge of foreign languages is extremely helpful in many careers and essential in some. Spanish is the official language of Spain, Puerto Rico and eighteen Latin American republics. It is also used by millions of persons in the United States, particularly in the Southwest, in Florida and in New York. Portuguese is the language of Brazil, largest country of South America, in addition to Portugal and important new countries in Africa like Angola and Mozambique. As with Spanish, substantial segments of the American population in California and the Eastern seaboard speak Portuguese. The United States has most significant commercial, diplomatic, cultural and military ties with the Spanish and Portuguese speaking countries.

Teaching Credentials

A bachelor's degree in *Spanish & Portuguese* is an acceptable major for entry into a Single Subject (secondary) or Multiple Subject (elementary) Credential Program. Students completing this degree, who plan to teach at the secondary level in California, should apply to the Single Subject Credential Program in the area of *Foreign Languages*. The State of California requires that credential candidates demonstrate their subject matter competency in this teaching area. Subject matter competency can be established in one of two ways: either by passing the National Teachers Examination in this teaching area or by completing a State approved program. (The approved program consists of selected course work included in the degree program.) Students should consult with department advisors, or advisors in the Graduate School of Education about courses which, when completed, eliminate the need for taking the National Teachers Examination. Students who wish to pursue a Multiple Subject (elementary) Teaching Credential are advised that the State of California requires that students complete either a Liberal Studies program (see details in Section J of the catalogue), or pass the National Teachers Examination (Common Examination). It is quite feasible for students to complete a degree major and to simultaneously fulfill the requirements for the Liberal Studies program. Admission to credential programs at UCSB also requires certain prerequisites. The following chart identifies these requirements.

	English 106	Ergonomics 109	Mathematics 100 A & B	Pre-Professional Experience
Multiple Subject Program	X	X	X	X
Single Subject Program	X	X		X

Courses taught in English

The following courses require no knowledge of a foreign language and are open to all students, without prerequisites. They satisfy the G.E. Program requirement for the B.A. in the area designated.

Portuguese

50FS • Freshman Seminar

*114 • Literature of the Portuguese Expansion [D]

*May be used to satisfy foreign literature requirement

*115 • Brazilian Literature in English Translation [D]

*120 • Portuguese Literature in English Translation [D]

125A—B • Culture and Civilization of Portugal and Brazil [D]

128 • Luso-Brazilian Cinema [C]

*180 • African Literature in Portuguese in English Translation [D]

Spanish

50FS • Freshman Seminar

*†115A—B • Masterpieces of Spanish Literature in English Translation [D]

†Not credited toward major or minor

All candidates for a teaching credential in Spanish at the secondary level must complete Spanish 100 (introduction to Hispanic Linguistics), 102A—B (Advanced Grammar and Composition), 103 (Spanish Pronunciation), 110A—B (Survey of Spanish Literature) and 111A (Survey of Spanish-American Literature).

Recommended courses are Spanish 107 (Languages in Contact) 108A—B—C (Spanish-English Contrastive Analysis, 119A—B (Spanish Institutions and Culture), 176 (Contemporary Spanish Culture), and 177A—B (Spanish-American Culture), or 178 (Mexican Culture). Students are directed to confer with designated counselors in the Department of Spanish and Portuguese concerning these requirements.

Successful completion of an advanced degree in Spanish is required for issuance of the Community College Instructor's Credential. Students interested in the related professional preparation program should contact the Education-Advising Office in the Graduate School of Education prior to the fall quarter of the year in which the advanced degree will be completed.

Scholarships and Fellowships in Portuguese Studies

Students whose studies include a strong emphasis in Portuguese, may be eligible for grants from the Jorge de Sena Memorial Fund and the Calouste Gulbenkian Foundation throughout the academic year. Applications should be made directly to the Department Chairman.

Correspondence Information

Department of Spanish and Portuguese, Phelps Hall, Rm. 4206, University of California, Santa Barbara, California 93106. Phone: (805) 961-3161.

*116 • Juan Ruiz: The Book of Good Love [D]

*†120A—B • Spanish-American Literature in English Translation [D]

126 • Spanish Cinema [C]

127 • Latin American Cinema [C]

*142 • Don Quixote in English Translation [D]

†180 • Mexican Civilization [D]

*†181 • Hispanic Poetry: 1900-1945 in English Translation [D]

*†182 • Hispanic Poetry since 1945 in English Translation [D]

Other departmental offerings accepted toward major:

AEP 191L • Bibliography I (2) Library Staff

Portuguese Lower Division courses

1 • Elementary Portuguese (4) Staff
Beginning course in elementary Portuguese. (F)

2 • Elementary Portuguese (4) Staff
Prerequisite: Portuguese 1 or equivalent.
Continues activities commenced with Portuguese 1. (W)

3 • Elementary Portuguese (4) Staff
Prerequisite: Portuguese 2 or equivalent.
Completes the basic study of the elements of the language. (S)

4 • Intermediate Portuguese (4) Staff [D]
Prerequisite: Portuguese 3 or equivalent
Begins review of basic grammar and syntax. (F)

5 • Intermediate Portuguese (4) Staff [D]
Prerequisite: Portuguese 4 or equivalent
Continues review of basic grammar. (W)

6 • Intermediate Portuguese (4) Staff [D]
Prerequisite: Portuguese 5 or equivalent.
An intensive course designed to develop students' skills in reading, and oral and written expression by reading and discussing Luso-Brazilian texts and writing compositions on related topics. (S)

8A—B—C • Portuguese Conversation (2-2-2) Staff
Prerequisite: Portuguese 3 or equivalent or the consent of the instructor.
Informal conversation hour. Courses conducted entirely in Portuguese.

10 • Beginning Intensive Portuguese (Summer Session Only) (12) Staff
Designed for high school students and university undergraduates who desire to accelerate and complete a year of language work in a summer session and for graduate students wishing to fulfill the graduate language requirement with Portuguese as one of the languages in which they are competent to read works in their major field. Prepares students to continue with second year Portuguese successfully.

11 • Portuguese for Graduate Students (5) Staff
Designed primarily for graduate students who already possess a knowledge of another Romance language and who wish to acquire a reading knowledge of Portuguese.

12 • Portuguese Bilingual Education (Summer Session Only) (2) Staff
(2 week course)
Current philosophies, problems, approaches, materials and instructional aids used in Portuguese-English bilingual-bicultural elementary

and secondary programs in a number of California school districts.

25 • Advanced Portuguese (Summer Session Only) (5) Staff [D]
Prerequisites: Portuguese 3 or equivalent.
Course is designed to reinforce students' comprehension and ability to express themselves in Portuguese, both orally and in writing, and to develop the student's vocabulary and awareness of syntactical structures in the language.

50FS • Freshman Seminar (3) Staff
Selected cultural, literary or linguistic topics of the Luso-Brazilian world.

Upper Division courses

Portuguese 6 or equivalent is prerequisite to all upper division courses given in Portuguese.

102A—B • Advanced Grammar and Composition (4-4) Staff [D]
Study of the finer points of Portuguese grammar and syntax. Equal stress is placed on written and oral practice of the language. The work in class will consist of careful study of essays and articles.

105A—B—C. Survey of Portuguese Literature (4-4-4) Staff [D]
A • Portuguese Literature from its origins to the 16th century. **B • Portuguese Literature** of the 16th, 17th and 18th centuries. **C • Portuguese Literature of the 19th and 20th centuries.**

106A—B—C • Survey of Brazilian Literature (4-4-4) Williams [D]
A • Brazilian Literature of the colonial period. **B • Brazilian Literature** from the 19th century to 1922. **C • Brazilian Literature** from 1922 to present.

114 • Literature of the Portuguese Expansion (4) Staff [D]
Literary masterpieces of the Portuguese Golden Age (15th, 16th and part of 17th centuries): chronicles of the discoveries, the epic poem *Os Lusíadas* by Camões, dramatic narratives of shipwrecks—all translated into English. Course intended to serve as an introduction into a culture relevant to U.S. development, particularly California.

†***115 • Brazilian Literature in English Translation** (4) Williams [D]
Readings in English of significant writers and poets of 19th and 20th-century Brazil: Gonçalves Dias, Castro Alves, Sousândrade, Machado de Assis, Mário de Andrade, Oswald de Andrade, Cecília Meireles, Guimarães Rosa, Suassuna and others.

†***120 • Portuguese Literature In English Translation** (4) Williams [D]
A presentation of major works in Portuguese to reveal the interest and the originality of Portuguese literature through the ages.

125A—B • Culture of Civilization of Portugal and Brazil (4-4) Staff [D]
The distinctive features of Portugal and Brazil as manifested in their institutions, art, music and literature. **A:** Portugal **B:** Brazil

128 • Luso-Brazilian Cinema (4) Williams [C]
Study in English of Luso-Brazilian films of past forty years both as an art medium and as a document on changing society. Special attention paid to the works of the new generation of directors. When applicable, the relationships between a literary work and its film adaptation will be studied.

132A—B • Luís de Camões (4-4) Staff [D]
A study of Camões' lyric poetry and epic poem, *Os Lusíadas*.

170 • African Literature in Portuguese (4) Staff [D]
Prerequisites: Portuguese 6 or equivalent; see instructor.
Modern authors from Cabo Verde, Angola and Mozambique

***180 • African Literature in Portuguese in English Translation** (4) Staff [D]
African writers from the ex-Portuguese colonies, presented in English translation, for the benefit of students in African Studies or related areas, who do not know Portuguese.

183AA—ZZ • Studies in Portuguese Literatures (4) Staff [D]
Prerequisite: Consent of the instructor.
Topic or author chosen by faculty member. Topic to be listed in schedule of classes. Course may be repeated for a total of 20 units, each course on a different topic. Students limited to one topic per quarter.

185 • Brazilian Novel of the 20th Century (4) Williams [D]
Prerequisites: Portuguese 4, 5, 6 or consent of the instructor.
A study of the Brazilian novel from Machado de Assis to the present, including authors such as Lima Barreto, Erico Veríssimo, Guimarães Rosa, Lins do Rego, Graciliano Ramos, Mário Andrade, Oswald de Andrade, Jorge Amado, Clarice Lispector.

189 • Brazilian Modernism (4) Williams [D]
An introduction to the poetry and prose fiction of the Brazilian avant-garde of the 1920's and 30's.

***199 • Independent Studies in Portuguese** (1-5) Staff
Independent studies with one of the Departmental instructors in Portuguese, to permit study of subject desired by student not covered in course offerings.

*See N2 for 198/199 independent studies unit limitations.

Graduate courses

—NOTE: The content of these courses will vary from quarter to quarter, and they may be repeated for credit with the consent of the department graduate adviser.

232 • Studies on Camões (4) Belchior
Camões' works in their historical and cultural contexts.

240 • Studies in Portuguese Mannerist and Baroque Literature (4) Belchior
Portuguese poetry and prose of the 16th and 17th centuries.

245 • Studies in Brazilian Colonial Literature (4) Staff
Selected authors and topics in Brazilian literature of the 16th, 17th and 18th centuries.

250 • Studies of Eça de Queiroz and the Portuguese Realistic Novel (4) Belchior
Eça de Queiroz's work, his conception of Realism, his influence on Spanish, Spanish-American and Brazilian literature, his most important followers.

255 • Studies on Machado de Assis and the Brazilian Novel (4) Belchior, Williams
Machado de Assis' novelistic work; its innovative approach as a basis of modern fiction. Other novelists of his time will be studied also.

260 • Studies in Brazilian Post-Independence Literature (4) Belchior, Williams
Selected authors and literary movements of the 19th and 20th centuries.

265 • Studies on Fernando Pessoa and the Avant-garde (4) Belchior
Pessoa's poetry, its influence on contemporary Portuguese poetry, and its relationship to the world *avant-garde* movement.

294A—B • Research Seminar in Brazilian Literature (4-4) Belchior, Williams
Primarily intended to train students in research techniques; background material and selection of topic in first quarter; completion of research paper in second quarter, reporting regularly to class on progress of work. In Progress grade for 1st quarter, letter grade in both quarters at end of 2nd quarter.

295A—B • Research Seminar in Portuguese Literature (4-4) Belchior, Williams
Primarily intended to train students in research techniques; background material and selection of topic in first quarter; completion of research paper in second quarter, reporting regularly to class on progress of work.
In Progress grade for 1st quarter, letter grade for both quarters at the end of 2nd quarter.

594A-594ZZ • Special Topics (1-4) Staff
Special Seminar on research subjects of current interest. S/U or letter grade.

596A-ZZ • Directed Reading and Research (2-4) Staff
Individual tutorial, normally for 3 units. A written proposal for each tutorial must be approved by student's program adviser and by the Department Chairperson. Letter grade or In Progress. The number of units which a student may take in this series depends on the nature of the program and the *consent of his adviser and/or the departmental Graduate Committee*.

597A-597ZZ • Individual Study for M.A. Comprehensive or Ph.D. Exams (2-12) Staff
Individual study under instructor who is member

of the student's program committee. S/U grade only. No unit credit allowed toward advanced degrees.

599A—ZZ • Ph.D. Dissertation Preparation (2-12) Staff
Research and writing of the dissertation. Instructor should be the chairman of the student's doctoral committee. S/U grading only. Maximum total 12 units.

Spanish Lower Division courses

It is highly recommended that students who have studied Spanish before take the Placement Examination administered by the Department to determine the level of Spanish they should begin in the Department's language program. Students may choose between Spanish 1-5 and Spanish 14 (Individualized Basic Spanish).

1 • Elementary Spanish (4) Staff
Beginning course in elementary Spanish.

2 • Elementary Spanish (4) Staff
Prerequisite: Spanish 1 or equivalent.
Continues activities commenced with Spanish.

3 • Elementary Spanish (4) Staff
Prerequisite: Spanish 2 or equivalent.
Completes the basic study of the elements of the language.

4 • Intermediate Spanish (4) Staff [D]
Prerequisite: Spanish 3 or equivalent.
Begins review of basic grammar and syntax.

5 • Intermediate Spanish (4) Staff [D]
Prerequisite: Spanish 4 or equivalent.
Continues the review of basic grammar and syntax. Course conducted in Spanish.

6 • Intermediate Spanish (4) Staff [D]
Prerequisite: Spanish 5 or equivalent. May be taken concurrently with Spanish 25.
An intensive course designed to develop students' skills in reading, and oral and written expression by reading and discussing Hispanic texts and writing compositions on related topics.

8A—B—C • Spanish Conversation (2-2-2) Staff
Conversational practice through which student learns idioms, conversational courtesies of the language, etc., and improves facility in speaking and understanding the spoken language. Passed/Not Passed grading only.
8A Prerequisite: Spanish 3 or equivalent;
8B Prerequisite: Spanish 4 or equivalent;
8C Prerequisite: Spanish 5 or equivalent.

9A—B—C—D • Spanish Conversation: Professional Subjects (2-2-2-2) Staff
Prerequisite: Spanish 6 or equivalent. Passed/Not Passed grading only
Directed conversation concentrating on these professional areas:
9A - Foreign Service
9B - Health work

9C - Legal and Social work
9D - Commerce

14 • Individualized Basic Spanish (1-20) Staff [D—only for increments of 3 or more units each completed above level 12]
Prerequisite: Consent of instructor.

Course consists of 20 sequential instructional units equivalent to Spanish 1, 2, 3, 4, 5. Successful completion of each unit earns the student one unit of credit and permits him to continue, if he so wishes, to the following unit. Each student progresses at his own rate of speed. At the end of each quarter, units of credit and grades are calculated on the basis of instructional units completed during that quarter.

Restricted to highly motivated students with extensive experience in foreign languages, willing to progress at least as fast as in a regular class.

20 • Introduction to 20th—Century Poetry. (4) Fuentes [D]
Prerequisite: Spanish 5 or equivalent.

The class will read and hear the poetry of such poets as Gabriela Mistral, Juan Ramón Jiménez, Nicolás Guillén and Pablo Neruda, read by the poets themselves, and record anthologies of modern poetry since Rubén Darío. Also, the class will see films on Lorca, Neruda and Borges.

25 • Advanced Spanish (4) Staff [D]
Prerequisite: Spanish 6 or equivalent; Spanish 6 may be taken concurrently with Spanish 25.

An intensive course taught in Spanish designed to reinforce students' comprehension and ability to express themselves in Spanish, both orally and in writing, and to develop the students' vocabulary and awareness of syntactical structures in the language.

50FS • Freshman Seminar (3)
Selected cultural, literary or linguistic topics of the Hispanic world.

Upper Division courses

Spanish 25 or equivalent is prerequisite to all upper division courses given in Spanish.

100 • Introduction to Hispanic Linguistics (4) Doman, Gallo, Perissinotto [D]
Prerequisite to all other Upper Division courses in Hispanic linguistics.

Introduction to linguistic theories, methods and problems as applied to Spanish. Given in Spanish with Spanish examples. (F,S)

101 • American Spanish (4) Doman, Gallo, Perissinotto [D]
Prerequisite: Spanish 100.

Geographical, social and stylistic distribution of phonemic, morphosyntactic and lexical features in Spanish as spoken in Latin America.

102A—B • Advanced Grammar and Composition (4-4) López, Perissinotto [D]
Required for Teaching Credential candidates with major in Spanish.

The study of the finer points of Spanish grammar and syntax. Equal stress is placed on written and oral practice of the language.

102C • Advanced Spanish for Communication: An Intensive Approach (4) Staff [D]

Prerequisite: Consent of the instructor.

For the advanced student or teacher of Spanish. Special attention to problems of language interference for bilingual persons; translation exercises, vocabulary expansion idiomatic constructions. (*Summer Session Only*)

103 • Spanish Pronunciation (4) Perissinotto
Required for Teaching Credential candidates.

Intensive patterned pronunciation drills and exercises in sound discrimination aimed at familiarizing the student with the mechanics of speech production. (F,S)

104 • Standard Spanish (4) Gallo [D]

Prerequisite: Spanish 25

Criteria for establishing correct usage in contemporary written and spoken Spanish; coexistence of different "correct" norms; problems of coherence in the choice of a model. Formal and informal standardization; leveling of regional differences through the influence of the mass-media or the Spanish Academy.

105 • Advanced Translation (4) López [D]

Prerequisite: Spanish 102A—B or consent of the instructor.

Oral and written translations to and from target language, allowing students to translate and interpret texts from different fields with accuracy and corrections as regards grammar, syntax, vocabulary and style. Theoretical points will be explained within contexts studied.

106 • Cultures in Contact (4) Gallo, Perissinotto [D]

Prerequisite: Spanish 100 or consent of instructor.

Patterns of cultural contacts in the U.S. between Anglos and Spanish-speaking communities (Cubans, Mexican-Americans and Puerto Ricans). Description of different acculturation situations with special reference to such problems as cultural identity and language loyalty and their relationship to social competence and integration. This course is intended to complement, from a cultural point of view, the objectives of Spanish 107.

107 • Languages in Contact (4) Doman, Perissinotto [D]

Prerequisite: Spanish 100 or consent of instructor.

The social and historical contexts of the contact between Spanish and Latin, Italian, French, Aztec, Quechua, English, Portuguese, etc. Causes and mechanisms that result in interference and borrowing on the phonic, grammatical and lexical levels.

108A—B—C • Spanish-English Contrastive Analysis (4-4-4) Doman, Gallo [D]

Prerequisite: Spanish 100 or consent of instructor.

Points of similarity and contrast in the phonic, grammatical and lexical systems of Spanish and English. Critical review of applications of contrastive analysis in such areas as the study of bilingualism, and the teaching of Spanish and English as a second language.

109 • The Spanish Language in the United States (4) Doman, Perissinotto [D]

Prerequisite: Spanish 100 or consent of instructor.

Synchronic and diachronic description of the

Spanish spoken by Hispanos—especially Chicanos, Cubans and Puerto Ricans in the U.S. Discussions complemented by tapes, slides and movies.

110A—B—C • Survey of Spanish Literature (4-4-4) Staff [D]

General Survey of Spanish literature.

110A - Middle Ages (F)

110B - 16th and 17th centuries (W)

110C - 18th through 20th centuries (S)

111A—B • Survey of Spanish-American Literature (4-4) Staff [D]

General survey of Spanish-American literature.

111A - From beginning to the 19th century (F)

111B - From Modernism to the present (S)

112 • Applied Spanish Linguistics for Teachers (4) Staff [D]

Prerequisite: Spanish 25 or equivalent. Intended especially for teachers or prospective teachers.

Fundamentals of Spanish phonology, morphology and syntax, with emphasis on areas that present special difficulty for English-speakers. Linguistic principles applied to the analysis and correction of learner errors, and to the evaluation, production and classroom use of teaching materials.

114A—B—C • The Spanish Language: A Linguistic Approach (4-4-4) Doman, Gallo, Perissinotto [D]

Prerequisite: Spanish 100.

Study of the systematic aspects of language structure which make communication possible. Each quarter deals with a different aspect of the Spanish system, as follows: **A • Phonetics and Phonemics B • Morphology and Syntax C • Semantics**

†*115A—B • Masterpieces of Spanish Literature (4-4) Bary [D]

Readings in English translation and discussion of representative works from the Middle Ages to the end of the sixteenth century, and from the seventeenth century to the end of the nineteenth.

***116 • Juan Ruiz: The Book of Good Love** (4) Sharrer [D]

Reading and interpretation of the 14th-century Spanish masterpiece in English translation. A study of *The Book of Good Love* in the context of other great works of the period, such as the *Decameron* and the *Canterbury Tales*.

117 • Essayists of Spain and Spanish America (4) Jaimes-Freyre [D]

Representative essayists of Spain, from Saavedra Fajardo to Ortega y Gasset and of Spanish America, from Sarmiento and Montalvo to Alfonso Reyes and Octavio Paz.

119A—B • Spanish Institutions and Culture (4-4) Barrón [D]

Study of the development of the Spanish nation, with special focus on key social and political institutions, the arts, and major currents of thought.

*May be used to satisfy foreign literature requirement.

†Not credited toward major or minor.

†*120A—B • Spanish-American Literature in English Translation (4-4) Bary, Jaimes-Freyre [D]

Outstanding 20th-century authors of Spanish America. **A • Spanish-American Literature. B • Mexican Literature.**

121A—B • History of Spanish and Portuguese Languages (4-4) Doman, Perissinotto, Sharrer [D]

Prerequisite Spanish 100; 121A prerequisite for 121B.

Major steps in the development of both languages from their origins to modern times.

121A: Focus on Spanish phonology, with major parallel developments in Portuguese.

121B: Morphology and syntax.

122A—B • Medieval Spanish Literature (4-4) Martínez-López, Sharrer [D]

A detailed survey of the main trends in Spanish literature to 1500.

123A—B • Hispanic Balladry (4-4) Martínez-López, Sharrer [D]

A • History of the Spanish ballad, Hispanic balladry in Spanish America, the United States and among the Sephardic Jews. **B • Origin and originality of the Mexican ballads (corridos)**; their history, themes and style.

124A—B • Theory and Analysis of Literature (4-4) Albarracín [D]

Discussion of relationships between reality, language and literature intended to determine pertinent linguistic features relevant for literary analysis. Theory is meant to provide the foundations for consistent analysis techniques which will be applied to Hispanic poems, short stories and drama.

126 • Spanish Cinema (4) Barrón, Fuentes [C]

Study in English of Spanish films of past forty years both as an art medium and as a document of a changing society. Special attention paid to the work of the new generation of directors. When applicable, the relationship between a literary work and its film adaptation will be studied.

127 • Latin American Cinema (4) Fuentes [C]

Study in English of Spanish Latin American films of the past forty years both as an art medium and as a document of a changing society. Special attention paid to the work of the new generation of directors. When applicable, the relationship between a literary work and its film adaptation will be studied.

128A—B • Creative Writing (4-4) Albarracín [D]

Prerequisite: Spanish 25 or equivalent and consent of the instructor.

Writing in such forms as short story and poem. Designed primarily for students who are inclined to write fictional prose and/or poetry in Spanish. An adequate level of language proficiency is needed. (P/NP grading. Only 4 units may be applied toward the major in Spanish.)

131A—B • Golden Age Poetry (4-4)
Martínez-López, Reynolds [D]
Lyric poetry of the 16th and 17th centuries: Garcilaso, Luis de León, San Juan de la Cruz, Lope, Quevedo, Góngora and others.

134 • Golden Age Novel (4) Reynolds [D]
The main novelistic types of the period: novel of chivalry; pastoral novel; picaresque novel and others (*Don Quixote* excluded).

137A—B • Golden Age Drama (4-4)
Martínez-López, Reynolds [D]
The classic *Comedia*, by Lope, Tirso, Alarcón, Calderón and other dramatists.

140A—B • Cervantes: *Don Quixote* (4-4)
Staff [D]
Reading and discussion of the first and second parts of *Don Quixote*.

141 • Cervantes: Other Works (4) Staff [D]
Readings from the minor works of Cervantes: *Novelas ejemplares*, *Comedias*, *Entremeses*.

***142 • Don Quixote in English Translation** (4) Bary, [D]
Reading and discussion, both in English, of Cervantes' novel in the context of Hispanic culture and of world literature.

145 • Colonial Spanish-American Literature (4) Albarracin, Reynolds, Jaimes-Freyre [D]
Introductory references to the *Cronistas* and the Conquest. Readings of such writers as Ercilla, Garcilaso Inca, Balbuena, Sigüenza y Góngora, Sor Juana Inés de la Cruz, etc.

150 • Eighteenth-Century Spanish Culture (4) Barrón, Bary [D]
Literature, social history, artistic and intellectual developments, all essential for a full understanding of subsequent events in both Spain and Spanish America.

161 • Spanish Romanticism (4) Barrón [D]
Main trends of Spanish Romanticism—representative poets, dramatists and prose writers.

165A—B • Nineteenth-Century Spanish Fiction (4-4) Barrón, Fuentes [D]
Main novelists of 19th-century Spain are studied.

170A—B • Spanish Literature from 1898 to 1936 (4-4) Bary, Fuentes, Phillips [D]
Readings of such authors as Unamuno, Baroja, Azorín, Valle-Inclán, Antonio Machado, Ortega, Gómez de la Serna, Guillén, García Lorca and others, analyzed in their historical and social context.

175 • Contemporary Spanish Literature (4) Bary, Fuentes, Phillips [D]
Spanish Literature since the Civil War. A study of the main trends of post-war Spanish novel, theater and poetry, in their historical and social context.

176 • Contemporary Spanish Culture (4) Fuentes [D]
A survey of the political, religious, social and philosophical issues in 20th-century Spanish life and letters.

177A—B • Spanish-American Culture (4-4) Williams [D]
Leading social, institutional, intellectual and artistic trends from the 16th century to the present.

178 • Mexican Culture (4) Staff [D]
Social, institutional, intellectual and artistic trends in the development of modern Mexico. May not be taken for credit by students who have already taken Spanish 180 (Mexican Civilization). Taught in Spanish.

***180 • Mexican Civilization** (4) Staff [D]
Social, institutional, intellectual and artistic trends in the development of modern Mexico. May not be taken for credit by students who have already taken Spanish 178 (Mexican Culture). Taught in English.

†*181 • Hispanic Poetry: 1900-1945 in English Translation (4) Fuentes, Jaimes-Freyre [D]
Reading and discussion of 20th-century Spanish and Spanish-American poets and trends in their sociohistorical context.

†*182 • Hispanic Poetry since 1945 in English Translation (4) Fuentes, Jaimes-Freyre [D]
Study of present-day poets—Paz, Parra, Cardenal, etc.—and trends; conversational and political poetry in English translation.

183AA—ZZ • Studies in Hispanic Literatures (4) Staff [D]
Prerequisite: Consent of instructor.
Studies in literary topics to be chosen for each quarter according to current interest of students and faculty. May be repeated on different topics for a total of 20 units of credit. Limited to one topic per quarter.

185A—B • Contemporary, Spanish-American Fiction (4-4) Albarracin, Gallo [D]
Readings of such authors as Borges, Rulfo, Fuentes, Vargas Llosa, García Márquez, Donoso. Emphasis put on the innovative structure and language brought to Hispanic literature by the so-called *Nueva novela*.

186A—B • Mexican Literature (4-4) Phillips [D]
Major trends in the literature of the Mexican people, including such movements as Modernist poetry, the novel of the Revolution, the *Contemporaneos*, and others.

187A—B • Modern Hispanic Drama (4-4) Fuentes, Jaimes-Freyre, Phillips [D]
A • Representative dramatists of Spain such as Unamuno, Valle-Inclán, García Lorca, Buero Vallejo, and others.
B • Representative Spanish-American dramatists such as Carballido, Solorzano, Wolff, Cuzzani, Marques and others.

189 • Modern Spanish-American Poetry (4)

Albarracin, Bary, Fuentes, Phillips [D]
Modernist and Vanguard schools: Dario, Herrera y Reissig, Huidobro, Vallejo, Neruda, Paz and others.

191 • The Theme of Don Juan in Spanish Literature (4) Martínez-López [D]
The theme of Don Juan as developed by representative Spanish authors from the 16th to 20th centuries.

197AA—ZZ • Individual Hispanic Authors (4) Staff
Prerequisites: See departmental course guide.
Intensive reading and discussion of selected Hispanic authors. May be repeated for a total of 20 units. Limited to one author per quarter.

199 • Independent Studies in Spanish (1-5) Staff
Prerequisites: Upper Division status and departmental approval.
Independent studies in selected subjects not covered by course offerings.

*See N2 for 198/199 independent studies unit limitations.

Graduate Courses

200 • Synchronic Linguistics (4) Doman, Gallo, Perissinotto
In-depth study on particular subjects in the field of the phonological, syntactic or semantic component, or the lexicon, as applied to modern Spanish.

202 • Diachronic Linguistics (4) Doman, Gallo, Perissinotto
The problem of linguistic change. Current trends in diachronic linguistics as applied to Spanish. In-depth study on particular subjects of the history of the Spanish language, historical grammar, of the Spanish language or Spanish philology.

207 • Description and Measurement of Spanish-English Bilingualism (4) Gallo
Prerequisite: Spanish 100, 107, 108A-B-C or consent of instructor.
Study of the various dimensions of bilingualism. Identification and delimitation of variables; choice of effective and acceptable units, and elaboration of measurement techniques. Validation of appropriate indices. Sampling techniques; proficiency tests.

209 • Dialectology (4) Doman, Gallo, Perissinotto
A study of Spanish as it developed and is now spoken in the various parts of Spain and Spanish America, with the distinguishing features of each. The reasons for the distinctive phenomena: morphological, phonological, syntactic, lexicographic. Indigenous substrata and historical influences (e.g., Anglicisms from the United States) in their formation. Use of texts of different periods.

212A—B • Bibliography and Methods of Research (4-4) Barrón, Doman, Gallo, Perissinotto, Sharrer
A • Literature
B • Linguistics
Letter grade only.

*May be used to satisfy foreign literature requirement.

†Not credited toward major or minor.

213 • Theory of Literary Criticism (4) Albaracin, Gallo

Analysis and application of methods of literary criticism in relation to principal texts in Spanish literature, with emphasis on stylistics, the history of Hispanic criticism and the impact of phenomenology and the social sciences. Techniques of literary scholarship.

214 • History of Hispanic Literary Criticism (4) Staff

A diachronic survey of the theory of literature and literary criticism in the West, from the Middle Ages to the present, with particular attention to the Hispanic World.

218 • Individual Hispanic Authors (4) Staff

Intensive study of the work of an individual Hispanic author, to be chosen by the instructor. Course may be repeated for a total of 18 units (6 courses, each a different author).

222 • Studies in Medieval Peninsular Literature (4) Sharrer

Studies in the medieval literatures of Castile, Galicia, Portugal, and Catalonia. Content of course will vary from quarter to quarter, and it may be repeated for credit with the consent of the departmental Graduate Adviser.

230A—B—C—D—E—F • Studies in Spanish Literature of the 16th and 17th Centuries (4-4-4-4-4) Martínez-López, Reynolds

Study courses will be taught under general title, with following divisions:

- A • Poetry**
- B • Narrative Prose**
- C • Comedia**
- D • Auto Sacramental**
- E • The Mystics**
- F • Moralists and Satirists**

Up to a total of 24 units is possible for student wanting all portions of 230.

240 • Studies on Cervantes (4) Staff

Selected topics studied in the light of recent scholarship on Cervantes.

245 • Studies in Spanish-American Colonial Literature (4) Albarracin, Reynolds

Selected topics from the 16th, 17th and 18th centuries.

260 • Studies in Nineteenth-Century Spanish Literature (4) Barrón, Fuentes

Seminars covering selected authors, theses or genres from the period in question.

270 • Studies in Twentieth-Century Spanish Literature (4) Bary, Fuentes, Phillips

Seminars covering selected authors, theses or genres from the period in question.

275 • Spanish Literature Since the Civil War (4) Bary, Fuentes, Phillips

Spanish literature from 1939 to the present; theater, poetry, novel.

280 • Studies in 20th-Century Spanish-American Poetry (4) Bary, Fuentes, Jaimes-Freyre, Phillips

Seminar in selected authors and aspects of 19th

and 20th-century Spanish-American poetry. Post-Modernist and Vanguard schools

283 • El Modernismo (4) Bary, Jaimes-Freyre, Phillips

The influence of Ruben Dario and his followers on the prose and poetry of Spanish America and Spain: 1888-1920.

285 • Studies in 20th-Century Spanish-American Fiction (4) Albarracin

Seminar in selected authors of 20th-century Spanish American novel.

290 • Literature of a Single Spanish-American Country (4) Staff

An intensive study of the literature of a particular Spanish-American country each time the course is offered. May be repeated for credit for different countries.

TA 292A—ZZ • Instructional Procedures and Supervised Teaching. (4) Staff

Prerequisite: B.A., admission to graduate school and appointment as a Teaching Assistant or student Associate.

Instruction and supervised teaching in preparation for teaching lower division Spanish and Portuguese courses at UCSB. Required of Teaching Assistants and student Associates. S/U grading only. Units earned in this course, which is required of all Teaching Assistants and student Associates during quarters in which they are teaching, do not apply toward completion of the M.A. or Ph.D. degree.

294A—B • Research Seminar in Spanish-American Literature (3-3) Staff

Primarily intended to train students in research techniques; background material and selection of topic in first quarter; completion of research paper in second quarter, reporting regularly to class on progress of work. In Progress grading, with letter grade for both quarters to be given at the end of the second quarter.

295A—B • Research Seminar in Spanish Literature (3-3) Staff

Primarily intended to train students in research techniques; background material and selection of topic in first quarter; completion of research paper in second quarter, reporting regularly to class on progress of work. In Progress grading, with letter grade for both quarters to be given at the end of the second quarter.

296A—B • Research Seminar in Spanish Linguistics (3-3) Doman, Gallo, Perissinotto

Primarily intended to train students in research techniques; background material and selection of topic in first quarter; completion of research paper in second quarter, reporting regularly to class on progress of work. In Progress grading, with letter grade for both quarters to be given at end of second quarter.

594A—ZZ • Special Topics (1-4) Staff

A special seminar on research subjects of current interest. Variable unit course. S/U or letter grade.

596A—ZZ • Directed Reading and Research (2-4) Staff

Individual tutorial, normally for 3 units. A written proposal for each tutorial must be approved by

the Department Chairperson. Letter grade or In Progress. The number of units which a student may take in this series depends on the nature of the program and the *consent of his adviser and/or the departmental Graduate Committee.*

597A—ZZ • Individual Study for M.A. Comprehensive and Ph.D. Exams (1-12) Staff

Individual study for M.A. Comprehensive and Ph.D. Exams. Instructor should be student's major professor or chairman of his doctoral committee. No unit credit allowed toward advanced degrees. Enrollment limited to 24 units per examination (maximum units in any one quarter, 12 units). S/U grading only.

598A—ZZ • Master's Thesis Research and Preparation (2-12) Staff

Prerequisite: Consent of thesis committee chairman.

Only for research underlying the thesis and writing of the thesis. S/U grading only. Units may not count toward degree requirement.

599A—ZZ • Ph.D. Dissertation Preparation (2-12) Staff

Only for research in preparing writing of the dissertation. Instructor should be the chairman of student's doctoral committee. S/U grading only. Maximum total 12 units.

Translation and Interpretation

Spanish 400 • Introduction to Translation, Spanish to English (4) Rainof

Translation of selected passages from Spanish into English with emphasis on economic, political and scientific texts. (F)

401 • Introduction to Translation, English to Spanish (4) López

Translation of selected passages from English into Spanish with emphasis on economic, political and scientific texts. (F)

410 • Introduction to Interpretation, Spanish to English (4) Rainof

Consecutive and simultaneous interpretation of simple material. (W)

411 • Introduction to Interpretation, English to Spanish (4) Rainof

Consecutive and simultaneous interpretation of simple material. (W)

420 • Advanced Translation, Spanish to English, English to Spanish (3-6) Rainof, López.

Prerequisite: Spanish 400 and consent of instructor.

Individual translation project into English/Spanish. (S)

421 • Conference Interpreting, Spanish to English, English to Spanish (3-6) Rainof

Prerequisite: Spanish 400, 410 and consent of instructor.

Simultaneous interpretation of entire speeches into English, or Spanish, using tapes and equipment in the language laboratory. (S)

Speech

Professors

- James J. Bradac, Ph.D., *Northwestern University; interpersonal communication and language studies.*
 Sanford E. Gerber, Ph.D., *University of Southern California; audiology.*
 Theodore D. Hanley, Ph.D., *University of Iowa; organic disorders.*
 Rollin W. Quimby, Ph.D., *University of Michigan; rhetoric.*
 Edwin R. Schoell, Ph.D., *University of Denver; language studies, public address.*

Associate Professors

- Janis M. Costello, Ph.D., *University of Kansas; speech and language pathology.*
 Jeffrey L. Danhauer, Ph.D., *Ohio University; audiology.*
 Robert L. Koegel, Ph.D., *UCLA; autism.*
 Maurice I. Mendel, Ph.D., *University of Wisconsin; audiology.*
 Anthony J. Mulac, Ph.D., *University of Michigan; quantitative research, and language studies.*
 Carol A. Prutting, Ph.D., *University of Illinois, Urbana-Champaign; speech and language pathology.*

Assistant Professors

- Dorothy Krueger, Ph.D., *Temple University; interpersonal communication.*
 James Lull, Ph.D., *University of Wisconsin-Madison; mass communication.*
 John M. Wiemann, Ph.D., *Purdue University; interpersonal and organizational communication.*

Adjunct Lecturers

- Elaine R. Cleeton, M.A., *Northwestern University; speech pathology.*
 Diane B. Gilchrist, M.A., *UC Santa Barbara; speech-language pathology.*
 Janice E. Peterson, M.A., *UC Santa Barbara; speech activities.*

Professors Emeriti

- Glen E. Mills, Ph.D., *University of Michigan.*
 Upton S. Palmer, Ph.D., *University of Michigan.*
 John C. Snidecor, Ph.D., *University of Iowa.*

Research Associates

- Dennis Busby, M.D., *audiology.*
 Robert E. Carrel, M.D., *speech pathology.*
 Susan G. Gray, Ph.D., *speech pathology.*
 Donald R. Gillies, M.D., *audiology.*
 Hugh D. Greer III, M.D., *speech pathology*
 Gregory Keller, M.D., *audiology.*
 Philip J. Levinson, Ph.D., *speech pathology.*

Concerns of the Department

Two majors are offered within the Department of Speech; **Speech and Hearing Sciences** and **Communication Studies**. The former is related to the health sciences, while the latter is related to the humanities and social sciences. Both lead to graduate work.

The **Speech and Hearing Sciences** major at UCSB is the only such program among the University's nine campuses. The program is designed somewhat in tracks or specialties which are (1) speech science, (2) hearing science, and (3) clinical speech, language, and hearing pathology. The emphasis within these tracks varies according to the level of study.

The central goal of the Speech and Hearing clinical program is to supply rigorously educated and highly trained personnel to serve the needs of speech, language, and hearing handicapped persons. Students acquire relevant and significant background knowledge in biology, physics, psychology, and linguistics; then knowledge in psychoacoustics, anatomy and physiology of hearing and speech, acoustics of hearing and speech, the science and laws of human behavior, etc., and only then practicum experience in clinical speech, language, and hearing. Degrees are offered at the B.A., M.A., and Ph.D. levels.

Communication Studies is a growing field of learning, teaching, and research. It continues to include the long-established courses such as public address, argumentation, debate, semantics, phonetics, rhetorical theory, and criticism. In recent years the addition of social-behavioral studies has resulted in courses dealing with persuasion and attitude change, information processing, group discussion and the decision-making process, interpersonal communication and the study of human relationships, conflict resolution, and cultural patterns of communication. Recently the department has significantly expanded its course offerings in the areas of mass media and mass communication. Interdisciplinary studies based in this department lead to the Ph.D. degree.

Department Advising

Department advisers should be consulted prior to students planning their coursework each quarter. Late changes in course offerings are posted in the department.

Since the **Speech and Hearing Sciences** major is organized hierarchically, it is essential that every student seek and receive academic advice each quarter. The department office can provide lists of required and elective courses and their sequences, and each student in the major is assigned a faculty adviser.

The **Communication Studies** list of elective courses provides opportunities for students to prepare for future academic and professional goals in law, teaching, mass media, organizational communication, social service, and other fields. Elective courses should be selected in consultation with an adviser in order to insure appropriate career preparation.

Bachelor of Arts - Speech and Hearing Sciences

Preparation for the major

Students must meet the General Education requirements as outlined in this catalog. Advising regarding speech and hearing courses is to be done by the Speech and Hearing faculty only.

***Courses required:** Speech 50 and 60, Psychology 1 or 101, Physics 11, Zoology 25 or equivalent course in human anatomy, and Linguistics 20. All six of these must be *completed before* a student may enter any upper division Speech and Hearing course.

*Upper Division major

Required: Speech 120, 122, 128A, 128AL, 128B, 128BL, 128C, 152, 153, 154, 166

Electives: Speech 128CL, 168, 170, 171, 190, 193, 195

* The Speech and Hearing Sciences curriculum is currently being revised. Some of these courses may be altered or replaced for 1980-81. The student should consult a faculty adviser in Speech and Hearing Sciences before planning a curriculum or enrolling in any courses.

Bachelor of Arts - Communication Studies

Preparation for the major

Students must meet the General Education requirements as outlined in this catalog. Courses listed below, whether in General Education sequence or not, are required in the Communication Studies major.

Required: Speech 10, 11, and 103; 12 units from Political Science, History, Psychology, Anthropology, and Sociology. Courses outside of Speech will apply toward appropriate General Education requirements.

Effective Winter 1981, students will not be admitted to the Communication Studies major until they have completed the following courses with a 2.5 grade point average and with no grade less than C-: Speech 10, 11, 103, and English 1B. While they are completing these preparatory courses, students will be classified in "pre-major" status.

Upper Division major

Required Theoretical Core: 20 units from Speech 129, 135, 136, 145, 149A, 150, 158, and

Electives: 20 units, 16 of which are upper division, from the following: Speech 47, 104, 112, 117, 131, 132ABC, 134, 137, 138, 139, 140, 142, 143, 144, 148, 149BC, 157, 159, 161, 180, 181, 183, 184, 185, 186, 187, 191, 194 and any course not elected in fulfillment of the required theoretical core.

Master of Arts

The department offers work leading to the M.A. degree in Speech and Hearing Sciences and in Speech Communication.

Admission Requirements and Prerequisites

The applicant in *Speech and Hearing Sciences* must have an undergraduate degree in Speech and Hearing or its equivalent. Normally the entering graduate student in *Speech Communication* has an undergraduate major in *Communication Studies*.

Degree Requirements

Requirements are specified in the Graduate Division Announcement. They include at least 30 units of courses and either a foreign language or a cognate field. The candidate in **Speech and Hearing Sciences** will be required to demonstrate adequacy in the field of statistics and complete a thesis. Completion of the M.A. in Speech and Hearing Sciences qualifies the student for membership in the American Speech-Language-Hearing Association and leads to satisfaction of the requirements for the Certificate of Clinical Competence. The UCSB M.A. program is accredited by the American Board of Examiners in Speech Pathology and Audiology of the American Speech-Language-Hearing Association.

For students in **Speech Communication** the Department offers Plan I (thesis) and Plan II (comprehensive examination). Incoming master's candidates should consult the Graduate Adviser for details about these two plans.

Doctor of Philosophy - Speech and Hearing Sciences

A multidisciplinary nonclinical program leading to the Ph.D. degree in Speech and Hearing Sciences is offered jointly with the University of California, San Francisco. Residence on each campus is required, with residency after admission to candidacy to be completed on the campus of the student's choice.

Requirements

Satisfactory demonstration of mastery (by examination and/or coursework) of those scientific fields considered to be the core of the Speech and Hearing Sciences: anatomical and physiological bases of speech, hearing, and language; psychological and social bases of speech, hearing, and language; acoustical and perceptual bases of speech, hearing, and language; and research methodology.

The student must demonstrate proficiency in one or two foreign languages or in a skill area judged by his advisory committee to be cognate to his research (e.g., computer programming).

Satisfactory completion of written and oral qualifying examinations.

Completion and oral defense of a doctoral dissertation.

Career opportunities

Most of the career opportunities for the **Speech and Hearing Sciences** majors continue to be in the public schools where graduates find employment as speech and hearing specialists or educational audiologists; some find their careers in clinics or hospitals. Some students are interested in teaching in classrooms for the aphasic or the autistic. An occasional student finds a career in a nonclinical setting such as a government or industrial research laboratory.

A major in **Communication Studies** serves practical as well as intellectual ends. For instance, our graduates have been welcome in law schools, theological seminaries, and graduate schools in a variety of fields. Even more have gone directly into teaching, personnel work, public relations, marketing, administration, management traineeships, mass media, government and community service, communication consulting, buying for stores, and other careers in which expertness in communication is important.

Teaching credentials

Students who complete a master's degree in *Speech and Hearing Sciences* at UCSB are eligible for the following California credentials: *Clinical-Rehabilitative Services Credentials - Language and Speech Specialist, Teacher of the Severe Oral Language Handicapped, or Audiologist in the Schools*. At UCSB a master's degree is required in order for a student to earn any of the above credentials. The Language and Speech Specialist credential and the credential for the Teacher of the Severe Oral Language Handicapped are currently available from the Department. Course requirements are specified by the Department and are similar to those for the American Speech-Language-

Hearing Association Certificate of Clinical Competence and for the California State License for Speech Pathologists. Student teaching experience in the public school setting is included in this credential program. The curriculum for the credential for Audiologist in the Schools is currently being devised and will soon be available. Students planning to obtain any of these credentials should contact the department's Coordinator of Clinical Services upon enrollment in the graduate program.

Students who complete a major in *Communication Studies* may be eligible to pursue a California teaching credential. Specific details of State of California and University of California requirements for the UCSB credential program are available from the Graduate School of Education, Education-Advising Office, Room 1180 Phelps Hall. Consult also with designated advisers in the Department of Speech.

California License for Speech Pathologist or Audiologist

Completion of the master's program may also qualify a student for the California License for Speech Pathologist or Audiologist. Requirements are similar to those specified for ASHA certification and Clinical-Rehabilitative Services credentials. Students planning to obtain a state license should contact the Department's Coordinator of Clinical Services upon enrollment in the graduate program.

Correspondence Information

Department of Speech, Snidecor Hall, University of California, Santa Barbara, California 93106. Phone: (805) 961-2281.

Speech

Lower Division courses

10 • Fundamentals of Interpersonal and Small Group Communication (4) Krueger [D]

Basic interpersonal and small group communication. Foundation for upper level courses. Includes experiential lab.

11 • Fundamentals of Speech (4) Peterson [D]

Introductory course, emphasizing current theories of communication, audience analysis, and persuasion. Preparation and presentation of speeches on topics of current concern. Conferences and videotape replay provides personalized assistance in the Tutorial Laboratory.

47 • Argumentation (4) Peterson [D]

Analysis of controversies, research and evidence, logical and ethical responsibility, attack and defense, organization, presentation, and evaluation of oral and written arguments.

50 • Introduction to Disorders of Speech and Hearing (4) Staff

Description of speech and language behaviors of children and adults with a variety of communica-

tion disorders including articulation, stuttering, voice, aphasia, cleft palate and hearing impairment. Includes a consideration of factors which may precipitate and/or maintain such communication disorders.

60 • Child Development (4) Koegel

Prerequisite: Psychology 1 or 101. Non-majors by consent of instructor only.

A focus on the study of issues relating to human development from birth through adulthood. Emphasis will be placed on the development of: language, social behavior, intelligence, and abnormal behavior patterns.

Upper Division courses

103 • Introduction to Mass Media (4) Lull [D]

Survey of radio, television, newspapers and magazines as instruments of mass communication. Emphasis on the functions of each medium in society with attention to the roles of disseminators of information, persuasion and entertainment.

104 • History of Broadcasting (4) Quimby [E2]

Development of radio and television as mass media. Emphasis on governmental and social controls.

112 • Community Dialog (4) Peterson [D]

Prerequisite: Consent of instructor.

Theoretical study of interpersonal, group and public speech communication followed by field application in local community through Campus Speaker's Bureau.

117 • Language and Human Behavior (4) Schoell [D]

Discussion of theories which explain meaning in language by the way in which human beings behave toward words.

*120 • Phonemics in Speech and Hearing (4) Gilchrist

Identification of the phonemes of American English and their symbolic representation, including modifying symbols for deviant phonology. Acoustic, physiological and perceptual parameters of speech sound formation.

*The speech and hearing sciences curriculum is currently being revised. Some of these courses may be altered or replaced for 1980-81. The student should consult a faculty adviser in speech and hearing sciences before planning a curriculum or enrolling in any courses.

***122 • Anatomy and Physiology of the Speech Mechanism** (4) Gilchrist

Prerequisite: *Zoology 25 or equivalent.*

Anatomical and physiological bases for an understanding of speech communication.

***122L • Neuroanatomy and Neurophysiology II** (1) Gilchrist and Mendel

Prerequisites: *Zoology 25 and Speech 128A.*

Neuroanatomy and Neurophysiology as they relate to speech and hearing. Self-instructional materials and testing.

128A • Aural Anatomy and Pathology (4) Mendel

Prerequisites: *Zoology 25 and concurrent enrollment in Speech 128AL*

Anatomy and physiology of the human auditory system; causes and types of hearing impairment; otological considerations; medical and surgical implications.

128AL • Neuroanatomy and Neurophysiology I (1) Mendel and Gilchrist

Prerequisites: *Zoology 25; concurrent enrollment in Speech 128A*

Neuroanatomy and neurophysiology as they relate to speech and hearing. Self-instructional materials and testing.

128B • Audiometric Principles (4) Gerber

Prerequisites: *Physics 11 and Speech 128A; concurrent enrollment in Speech 128BL required.*

Introduction to electroacoustics and psychoacoustics; sound production and reception in human communication; basic audiometric procedures, identification audiometry, transducers, hearing measurement.

128BL • Audiometry I (1) Goller

Prerequisites: *Physics 11 and concurrent enrollment in Speech 128B*

Laboratory and practicum in audiometric procedures.

128C • Audiometry and the hearing impaired (4) Danhauer

Prerequisites: *Speech 128A and 128B; concurrent enrollment in Speech 128CL optional*

Theory and practice of oral communication as it applies to a wide range of situations. Course material explores rhetorical situations and aims at solving problems of invention, disposition, style, and delivery. Students prepare and deliver speeches on a variety of topics. Video-tape recording is employed as a training aid.

132A • Issues in American Public Address (4) Schoell [E2]

A survey of significant issues and a study of the leading speakers who dealt with them. Covers the historical period to the end of the Civil War.

132B • Issues in American Public Address (4) Schoell [E2]

A survey of significant issues and a study of the

leading speakers who dealt with them. Covers the historical period from the end of the Civil War to World War II.

132C • Issues in American Public Address (4) Schoell [E2]

Prerequisite: *132A or 132B*

A rhetorical study in depth of the speaking of a period, or the speaking on a single issue, or the speaking of an individual.

134 • Contemporary Public Address (4) Staff [D]

An analytical study of the persuasive efforts of the leaders of major social, political, and religious reform movements since World War II.

135 • Critical Analysis of Rhetoric (4) Quimby [D]

Introduction to the process of rhetorical criticism and the analysis of rhetorical texts.

136 • Persuasion (4) Mulac [E2]

Prerequisite: *Speech 11.*

Analysis and synthesis of current persuasion theory as it has evolved through research in the behavioral sciences. Topics for study include: attention, motivation, set, materials of persuasion, stimulus manipulation and measurement of resultant behavior.

***137 • Communication and Conflict** (4) Krueger [D]

Theory and research on communication and conflict in various contexts. Experiential laboratory in which students observe and analyze conflict through the use of simulations and exercises.

138 • Nonverbal Communication in Human Interaction (4) Wiemann [D]

A review of theories and empirical research on the role of paralinguistic and kinesic message-behaviors in face-to-face communication. Students will conduct and report original field or laboratory studies of nonverbal communication.

139 • Radio and Television Aesthetics (4) Lull

Theory of programming and production techniques. Evaluation of taped examples. Some writing of brief program materials.

140 • Radio and Television Production (4) Lull

Prerequisite: *Consent of instructor.*

Introduction to theory and practice of radio and television production. Will *NOT* help one qualify for FCC first or second class license.

142 • Oral Interpretation of Literature (4) Staff [D]

Principles and procedures for the analysis of literature as preparation for oral communication. Practice in oral presentations of several types of literature.

144 • Developing Issues in Contemporary Broadcasting (4) Lull [E2]

Prerequisite: *Speech 104 with grade of C or better.*

Survey of current legal, social and technical problems facing managers, regulators and audiences of broadcast media. Emphasis on opportunities for meaningful citizen access to radio and television.

145 • Mass Communication and Human Behavior (4) Lull [D]

Prerequisite: *Speech 103*

Theories of mass communication in relation to interpersonal communication processes. Analysis of behavior of audiences of the mass media. Emphasis on family interaction, persuasion theory, media effects on children and minorities, sex-role stereotyping and techniques of audience measurement.

148 • Radio and Television Performance (4) Mulac

Prerequisites: *Communication Studies major and consent of instructor.*

Theory and practice of performance using the broadcast media. Students will prepare and perform radio and television non-commercial announcements, interviews, and sustaining programs.

149A • Small Group Communication (4) Krueger [D]

Prerequisite: *Speech 10*

Theory and research on communication in several group contexts. Includes experiential laboratory in which students observe and analyze communication processes in small groups.

149B • Issues in Group Communication (4) Krueger [D]

Prerequisite: *Speech 149A*

In depth focus on salient issues in group communication. Covers relevant theory and research in topic area.

149C • Communication and Group Leadership (4) Krueger

Prerequisite: *Speech 149A*

Theory and research on group leadership. Relationship between communication and leadership. Experiential lab in which members practice facilitative skills.

150 • Phonetics (4) Schoell [D]

Phonetic identification of the sounds of American English. Acoustics and physiology of speech production. General American pronunciation standards and regional variations.

***152 • Measurement and Treatment of Language: Phonemic** (4) Costello

Prerequisite: *Speech 120, 166*

Procedures for the assessment of articulatory behavior; design and implementation of various approaches for remediation of phonemic differences.

***153 • Natural Acquisition of Syntactic-Semantic Pragmatic System** (4) Prutting

Prerequisites: *Speech 50, 60, and 120*

Acquisition of the syntactic-semantic pragmatic system in children. The course consists of theoretical, historical, contemporary and applied aspects of language acquisition.

***154 • Measurement and Treatment of Language: Syntax-Semantics-Pragmatics** (4) Prutting

Prerequisites: *Speech 153, 166*

Procedures for the assessment of syntactic, semantic, and pragmatic behavior, design and implementation of various approaches for remediation of language delay.

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158 • Interpersonal Communication (4) Wiemann [E2]*Prerequisite: Speech 10*

Survey of theories of interpersonal communication in social and intimate relational contexts, with particular attention to role enactment, social exchange, dimensions of interpersonal communication, development and deterioration of relationships, and communicative competence.

159 • Legal Argumentation (4) Staff [E2]

Open to juniors, seniors, and graduate students. Forensic rhetoric is concerned with issues, evidence, kinds of arguments, and language in lawyers' pleadings and courts' opinions.

161 • Classical Rhetoric (4) Quimby [D]*Prerequisite: Speech 129 or graduate status*

Development of rhetorical theory from Gorgias to the Christian Sermon.

***166 • Principles of Behavior Modification** (4) Costello*Prerequisite: Psychology 1 or 101*

Basic principles of behavior modification and their use in the classroom, family, and clinical environments with special reference to speech pathology.

***168 • Evaluation and Remediation Procedures** (4) Cleeton*Prerequisite: Speech 152 (may be taken concurrently) and 166. Consent of instructor.*

Remediation of communication disorders in children and adults. Off campus screening of school age children.

170 • Clinical Practice: Hearing (1-2) Goller*Prerequisites: Speech 128A, 128B, 128C. Consent of instructor.*

Supervised application of diagnostic procedures in hearing clinic. May be repeated for maximum of 6 units.*

*Combined between Speech 170 and 171.

Class size limited to assure appropriate supervision.

171 • Clinical Practice: Speech (1-2) Gilchrist and Cleeton*Prerequisites: Speech 152, 154, 166 and 168. Consent of instructor.*

Supervised application of remedial procedures in various clinical settings. May be repeated for maximum of 6 units.*

*Combined between Speech 170 and 171. Class size limited to assure appropriate supervision.

180 • Contemporary Rhetoric (4) Staff [D]

Discussion of theoretical formulations of Richards, Weaver, Burke, McLuhan, and others, and the theory-building dimension of research in verbal communication.

181 • Quantitative Methods in Speech Research (4) Mulac

The methodology for quantitative research in Speech. Computation of standard statistical procedures, measurement theory, and experimental design.

183 • Organizational Communication (4) Wiemann [D]*Prerequisite: Speech 10.*

Application of communication theory and re-

search to on-going organizations, with special emphasis on bureaucratic industrial organizations.

184 • Advanced Interpersonal Communication (4) Wiemann [D]*Prerequisites: Speech 10 and 158 and consent of instructor*

Intensive analysis of current theory and research in a selected area of interpersonal communication, with special attention to theory development and testing. Variable topics, including phylogeny and ontogeny of communication, behavior exchange, relational communication and communicative competence.

185 • Cultural Patterns of Communication (4) Staff [E2]

Social and cultural influences in face-to-face communication processes. A sociolinguistic analysis of problems of diversity of speech use in contemporary America.

186 • Marriage and Family Communication (4) Krueger [E2]*Prerequisite: Speech 10*

Interpersonal communication in marriage and families. Focus on the role of communication in defining and maintaining family relationships.

187 • Relational Communication (4) Krueger and Wiemann [D]*Prerequisites: Speech 10 and 158*

Theory and research from several theoretical perspectives on communication processes in intimate relationships.

***190 • Neuropathologies of Speech** (4) Gilchrist*Prerequisites: Speech 122, 154*

Examination of the communicative effects of neuropathologies. Remedial procedures. Will be offered in even-numbered years.

191 • Practicum in Communication Studies (1) Staff*Prerequisites: Open to junior/senior majors of proven scholastic ability by consent of instructor; two upper division courses in the practicum topic area.*

Provides faculty supervision for students participating in formal, practical work experience. Course may be repeated for a maximum of three units. Written proposal required.

***193 • Phonation and Resonance** (4) Gilchrist*Prerequisite: Speech 122*

Consideration of structural and functional causes of articulatory and vocal deviations such as those associated with cleft palate and laryngeal disorders. Remedial procedures. Will be offered in odd-numbered years.

194 • Group Studies for Advanced Students (1-4) Staff

Selected topics in accordance with instructors' areas of specialization.

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195 • Infantile Autism (4) Koegel*Prerequisite: A course in behavior modification (may be taken concurrently)*

A focus on the study of variables pertaining to diagnosis and treatment of autistic children, and understanding of variables involved in abnormal child development (deviant language acquisition, abnormal social relations, etc.).

196 • Infantile Autism Laboratory (2-4) Koegel*Prerequisite: Speech 195 or consent of instructor*

Students design and carry out a supervised experimental analysis or treatment program for an autistic child. Course may be repeated for a maximum of 12 units.

197 • Instructional Laboratory (1-4) Staff*Prerequisites: Senior standing; B average in Speech and Hearing major; consent of instructor.*

Tutoring experience for advanced undergraduate students in preparation for graduate education.

***199 • Independent Studies in Speech** (1-5) Staff*Prerequisite: open to seniors of proven scholastic ability by consent of chairman and instructor.*

199 courses are limited to no more than 5 units in one quarter and no more than 12 units total. Written proposal required.

*See N2 for 198/199 independent studies unit limitations

Graduate courses

200 • Introduction to Graduate Study in Speech (3) Staff**201 • Introduction to Graduate Speech and Hearing** (4) Koegel*Prerequisite: Speech 181 or equivalent.*

Designed to acquaint the student with the procedures and disciplines essential for pursuing graduate thesis work in speech and hearing sciences.

202 • Seminar in College Speech Pedagogy (4) Mulac

Theory and practice of teaching speech in college. Topics include preparing behavioral objectives, leading discussions, giving feedback, constructing tests, and grading.

204 • Theory and Practice of Argumentation (4) Staff**205 • The Rhetoric of Dissent** (4) Staff**207 • Communication Theory Construction** (4) Wiemann and Quimby

The nature of theory and theory building in human communication.

208 • Description and Analysis of Communication (4) Mulac*Prerequisite: Graduate standing and Speech 181 or consent of instructor*

The purposes and methods of describing and analyzing communicative behavior.

209 • Criticism of Communication (4) Quimby*Prerequisite: Graduate Standing*

The making of judgements about communicative behavior

220 • Experimental Phonetics (4) Staff*Prerequisites: Speech 120, 121 and 122 or consent of instructor*

Practicum in measurement and analysis of speech production data

***222 • Psychoacoustics (4)** Mendel*Prerequisites: Graduate status and permission of instructor*

Research methods in psychological and physiological acoustics; review of significant studies, use of instrumentation.

***223 • Electrophysiological Audiology (4)** Mendel*Prerequisite: Consent of instructor*

Physiological acoustics; use of instruments and methods to assess physiological responses to sound: encephalography, cardiography, cochleography, etc. Offered in odd-numbered years.

***224 • Pediatric Audiology (4)** Gerber*Prerequisites: Speech 124 and consent of instructor*

Developmental anatomy, physiology, and pathology of hearing. Screening and diagnostic audiometry for neonates, infants and children up to age 36 months. Genetics of hearing and deafness.

***225 • Educational Audiology (4)** Danhauer*Prerequisites: Speech 170, 226. Speech 227 recommended; consent of instructor*

Provides student with theoretical and practical techniques for performing audiology in the educational setting. Coverage of special problems unique to the school-aged hearing-impaired child and his educators.

***226 • Clinical Audiology (4)** Mendel*Prerequisite: Speech 126 or consent of instructor*

Study of advanced audiological diagnostic procedures and related research: laboratory experience using diagnostic and research instrumentation.

***227 • Auditory Rehabilitation and Electroacoustic Assessment (4)** Danhauer*Prerequisites: Speech 170, 226 and consent of instructor.*

Comparative theoretical, methodological and experimental approaches to understanding and improving communication problems of the hearing impaired. Evaluation of electroacoustic amplification systems for the hearing impaired is also stressed.

***228 • Medical Audiology (4)** Mendel*Prerequisites: Speech 226 and consent of instructor*

Advanced study of causes and types of hearing impairment; otological considerations, temporal bone anatomy, medical and surgical implications

***229A • Speech Perception (A) (4)** Danhauer*Prerequisites: Graduate status and consent of instructor*

In depth study of the speech perception process. Review of germinal studies regarding parameters of speech, and perceptual theories. Emphasis on distinctive features—theory and application.

***229B • Speech Perception (B) (4)** Danhauer*Prerequisites: Speech 229A, graduate status, and consent of instructor.*

Continuation of current information relevant to Speech Perception 221A; design and perform a research project; evaluate computer analytic techniques.

***230 • Occupational and Environmental Noise (4)** Mendel*Prerequisites: Speech 226 and consent of instructor*

Contemporary theoretical, methodological, and experimental approaches to the study of noise in the occupational and environmental settings.

232 • Public Address in Antiquity (4) Staff**237 • Seminar: Communication and Conflict (4)** Krueger

Theory and research on the process of communication in conflict situations.

238 • Seminar: Nonverbal Communication (4) Wiemann*Prerequisites: Speech 138 or graduate standing*

Analysis of nonverbal behavior as communication, with special emphasis on design and implementation of research.

***245 • Experimental Studies in Speech (4)** Staff*Prerequisite: Consent of instructor*

Critical consideration of the theoretical and experimental bases of speech science.

***251 • Seminar in Language (4)** Prutting*Prerequisite: Consent of instructor*

Consideration of psycholinguistic and sociolinguistic theory and research. Application to the field of Speech Pathology will be emphasized.

***253 • Cognitive and Social Processes (4)** Prutting*Prerequisite: Consent of instructor*

Processes of cognitive development will be explored. Relationship between cognition and language will be considered.

258 • Seminar: Interpersonal Communication (4) Wiemann*Prerequisites: Speech 158 or consent of instructor*

Analysis of theory and research related to interpersonal communication processes, with an emphasis on informal and intimate relationships. Development and implementation of student research.

261 • Classical Rhetoric (4) Staff*Prerequisite: Speech 129***264 • Studies in Rhetoric (4)** Quimby*Prerequisite: Consent of instructor*

Critical examination of types of rhetoric

***267 • Disfluent Speech and Disorders of Speaking Rate (4)** Costello*Prerequisite: Consent of instructor*

Identification and development of stuttering

behavior in children and adults; procedure for description and measurement of such behaviors; special attention to the design of treatment programs incorporating various remediation approaches, including behavior modification, counseling, group treatment.

270 • Advanced Clinical Practicum: Hearing (1-4) Goller*Prerequisites: Graduate standing in Speech and Hearing Sciences and consent of instructor*

Supervised application of sophisticated diagnostic procedures in hearing clinic. Seminar on clinical procedures also required.

271 • Advanced Clinical Practicum (1-4) Gilchrist and Cleeton*Prerequisites: Graduate standing in Speech and Hearing Sciences and consent of instructor*

Supervised application of remedial clinical settings utilizing sophisticated diagnostic and remedial procedures. Seminar topics will address clinical procedures.

***273 • Seminar in Articulation (4)** Costello*Prerequisite: Graduate standing in Speech and Hearing or consent of instructor*

A study of the experimental and clinical literature dealing with the measurement and treatment of articulatory disorders in children and adults. Theoretical and applied issues will be included.

***276 • Theories of Hearing (4)** Gerber*Prerequisites: Speech 121 or Psychology 107*

Historical review of auditory theories as they apply to man. Emphasis on current theories of cochlear and retrocochlear processes. Auditory signal detection.

280 • Seminar: Group Communication (4) Krueger

Readings in communication theory and design of research projects on small group communications.

282 • Seminar: Communication and Culture (4) Staff*Prerequisites: Speech 185 and consent of instructor*

Theory and literature of the ethnography of communication, with particular reference to the question of how to discover, describe and interpret a community's culture patterns of communication.

283 • Seminar: Organizational Communication (4) Wiemann*Prerequisites: Speech 183 or graduate standing*

Analysis of communication in on-going organizations. Topics of interest include communication networks, decision making, communication climate, theories of management communication, etc.

285 • Seminar in History and Criticism of Rhetoric and Public Address (4) Staff

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286 • Seminar in Quantitative Methodology (4) Mulac

Methods employed in experimental and descriptive research in Communication Studies and Speech and Hearing. Measurement theory, experimental design, and statistical analysis.

287 • Seminar: Relational Communication (4) Kreuger and Wiemann

Prerequisites: Speech 158 or equivalent

Theory and research literature focusing on communication in on-going relationships with special attention to theory development and testing. Design and implementation of research.

289 • Seminar in Persuasion (4) Mulac

Prerequisites: Speech 136 or consent of instructor

Analysis and criticism of current theories of persuasion.

290 • Seminar: Theories of Mass Communication (4) Lull

Prerequisite: Consent of instructor.

Cognitive and social process theories of mass communication. Design and implementation of research strategies for message and audience analysis.

***292 • Organic Disorders of Speech I** (4) Hanley

Prerequisite: Speech 122.

Evaluation and management of speech disorder associated with congenital or acquired pathologies or deformities of the larynx and palate.

293 • Organic Disorders of Speech II (4) Hanley

Prerequisite: Speech 292 (may be taken concurrently).

Examination of history, theories and research relating to congenital or acquired pathologies or deformities of the larynx and palate.

294 • Seminar in Acquired Aphasia (4) Staff

Prerequisites: Graduate standing or consent of instructor.

Discussion of the nature and etiology of acquired aphasia, methods of language measurement and treatment and critique of current literature regarding the language and other problems of aphasic persons. Observation of aphasic patients included.

295 • Seminar in Autism (4) Koegel

Prerequisite: Consent of instructor.

Discussion of critical issues in the field of autism with emphasis on diagnosis and treatment.

297 • Laboratory for Teaching Assistants (2-4) Staff

Subject oriented, designed to relate directly to the teaching of a particular course in progress, to improve the skills and effectiveness of the department's teaching assistants.

298A • Curriculum instructional procedures and materials used in teaching speech and hearing (3) Cleeton

Remedial methods for the speech and hearing handicapped in the public schools. Laboratory required. Required for state credential candidates. Must be taken concurrently with Speech 298B.

298B • Student Teaching: Speech and Hearing (6) Gilchrist

Prerequisites: Speech 171, completion of one graduate year, decision of faculty committee, and completion of 150 clinical clock hours.

Students must complete a total of 100 clock hours of actual teaching exclusive of observation in the public school setting.

299A • Curriculum instructional procedures and materials used in teaching speech (4) Schoell

Prerequisites: Senior or graduate standing and consent of instructor.

The application of research and theory to classroom practice in the teaching of speech communication.

299B • Student Teaching: Speech (3-6) Schoell

Prerequisites: Speech 299A, graduate standing and consent of instructor.

Supervised teaching in Speech Communication at the secondary level.

501 • Research Seminar Speech and Hearing (1) Staff

Prerequisite: Graduate standing.

Discussion and criticism of current research activity.

594AA—594ZZ • Special Topics (1-4) Staff

Prerequisite: Consent of instructor.

Selected topics in accordance with instructors' specializations. Subject matter will be selected from same group as listed for 598 series. (May be repeated with a different topic for a maximum of nine units.)

595AA—595ZZ • Group Studies (3) Staff

Prerequisite: Consent of instructor.

Critical view of research organized on a topic basis in accordance with instructors' specializations. Subject matter will be selected from same group as listed for 598 series. (May be repeated with a different topic for a maximum of nine units.)

596AA—596ZZ • Directed Reading and Research (2-4) Staff

Prerequisite: Consent of instructor.

Individual tutorial. A written proposal must be approved by the department chairperson and filed with the Graduate Division. Subject matter will be selected from same group as listed for 598 series. (May be repeated for a maximum of 10 units.)

597AA—597ZZ • Preparation for the Qualifying Examination (1-4) Staff

Prerequisite: Consent of graduate adviser.

Directed group or individual preparation for the master's or doctoral qualifying examination.

598AA—598ZZ • Master's Thesis and Research and Preparation (1-12) Staff

The thesis is done under the direction of the chairperson of a student's thesis committee.

599AA—599ZZ • Dissertation Preparation (1-12) Staff

Prerequisites: Consent of the instructor; advancement to candidacy.

This course is reserved for writing the dissertation.

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Subject A

Faculty

William S. Marks III, Ph.D., *Stanford University*;
Department Chairperson
Jean E. Heywood, M.A., *University of Toronto*; *Lecturer*

Regulations

For regulations governing the Subject A requirement, see **H2**.
For regulations governing the English as a Second Language requirement, see **E2**.

Lower Division Courses

Subject A • English Composition (4) Staff
Four hours weekly for one quarter. This course offers training in the study of English composition through a descriptive study of the English language with emphasis on usage, rhetoric, and style. Weekly compositions and other assignments enable students to develop writing skills.
Satisfaction of the Subject A requirement is prerequisite to enrollment in English 1A.

English as a Second Language • 1A (5) Staff
Prerequisite: Qualifying score on English Language Examination.

A general course in English for foreign students, covering reading, writing, speaking, and listening at an intermediate level. Regular attendance at the language laboratory is required.

English as a Second Language • 1B (4) Staff
Prerequisite: Qualifying score on English Language Placement Examination.
Speaking and listening in English at an intermediate level for foreign students. Designed to help students develop natural speech patterns in English through systematic drills in pronunciation patterns, extemporaneous speaking, group discussions, general question and response prac-

tice in everyday conversation, and use of prepared language laboratory program.

English as a Second Language • 1C (4) Staff
Prerequisite: Qualifying score on English Language Placement Examination.
Advanced reading and writing of English for foreign students. Designed to make students more fully aware of the variety of styles and levels of usage in written English, to improve their vocabulary skills, and to develop their ability to write good prose. Through reading and writing analytical prose, students are exposed to the kind of English essential to university-level writing.

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- Institute for Theoretical Physics, Walter Kohn, Director

Organized Research Units

- | | |
|---|--|
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| Community and Organization Research Institute, Harold L. Votey, Jr., Director | Intercampus Institute for Research at Particle Accelerators, David O. Caldwell, Associate Director |
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| | Social Process Research Institute, David Brokensha, Director |

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- Coal Oil Point Reserve, David Coon, Manager
- Santa Cruz Island Reserve, Lyndal Laughlin, Resident Manager
- Valentine Eastern Sierra Reserve, (includes Valentine Camp and Sierra Nevada Aquatic Laboratory)
John M. Melack, Faculty Manager

Nondiscrimination Statement

The University of California, in compliance with Titles VI and VII of the Civil Rights Acts of 1964, Title IX of the Educational Amendments of 1972, and Section 504 of the Rehabilitation Act of 1973, does not discriminate on the basis of race, color, national origin, religion, sex, or handicap in any of its policies, procedures, or practices. This nondiscrimination policy covers admission and access to, and treatment and employment in, University programs and activities, including but not limited to, academic admissions, financial aid, educational services, and employment. Inquiries regarding the University's equal opportunity policies may be directed to The Affirmative Action Coordinator, at (805) 961-2089.

Salary and Employment Information, University of California

Field of Study	Degree Level of Graduates			Probable or Definite Job Commitment ²
	Bachelor's	Master's	Doctorate	
	Average Monthly Salary ¹			
	Engineering	\$1212-1672	\$1513-1779	
Humanities	614-1204	764-1296		
Life Science	622-1224			
Management	760-1270	1246-1826		
Physical Science	928-1598	1177-1725	1300-2087	
Social Science	629-1292	795-1342		

¹ Source: A 1979 national survey of a representative group of colleges conducted by the College Placement Council, representing the 80 percent range of offers throughout the country. It should be noted that a wide variation in starting salaries exists within each discipline based on job location, type of employer, personal qualifications of the individual, and employment conditions at the time of job entry.

²Source: *The Job Market for UCLA's 1979 Graduates*. Percentages are based only upon those students who planned to work immediately after graduation.

Nonresident Tuition Fee Statement

Students who have not been residents of California for more than one year immediately prior to the residence determination date for each term in which they propose to attend the University are charged, along with other fees, a non-resident fee of \$800 for the quarter or \$1200.00 for the semester. The residence determination date is the day instruction begins at the last of the University campuses to open for the quarter, and for schools on the semester system, the day instruction begins for the semester.

General

The rules regarding the establishment of legal residence for tuition purposes at the University of California are governed by the Education Code and by the Standing Orders of The Regents of the University of California. Under these rules permanent residence for tuition purposes can be established by adult citizens or by certain classes of aliens. There are also particular rules applicable to the residence classification of minors (under 18) in that such residence is generally regarded as being derived from the parent or parents with whom the minor has last resided.

In order to be classified as a resident for tuition purposes, an individual must have established his or her residence in California for more than one year immediately preceding the residence determination date for the term during which he or she proposes to attend the University and relinquished any prior residence. An individual must couple his or her physical presence within this state for one year with objective evidence that such presence is consistent with his or her intent in making California his or her permanent home and, IF THESE STEPS ARE DELAYED, THE ONE-YEAR DURATIONAL PERIOD WILL BE EXTENDED until BOTH presence and intent have been demonstrated for one full year. Indeed, physical presence within the state solely for educational purposes does NOT constitute the establishment of California residence under state law, regardless of the length of his or her stay.

Relevant indicia which can be relied upon to demonstrate one's intent to make California his or her permanent residence include the following: **registering and voting in California elections; designating California as his or her permanent address on all school and employment records, including military records if one is in the military service; obtaining a California driver's license or California Identification Card, if a non-driver; obtaining California vehicle registration; paying California income taxes as a resident, including income earned outside this state; establishing an abode where one's permanent belongings are kept within California; licensing for professional practice in California; and the absence of these indicia in other states during any period for which residence in California is asserted.** Documentary evidence may be required. All relevant indicia will be considered in the classification determination.

Students MUST PETITION IN PERSON at the Registrar's Office/Office of Admissions and Records for a change in classification from non-resident to resident student. All changes of status MUST be initiated prior to the late registration period for the term of attendance for which the student seeks reclassification. The student should be prepared to provide appropriate written documentation.

The residence of a parent with whom an unmarried minor child maintains his or her place of abode is the residence of the unmarried minor child. When the minor lives with neither parent, his or her residence is that of the parent with whom he or she maintained his or her last place of abode, provided that the minor may establish his or her residence when both parents are deceased and a legal guardian has not been appointed. The residence of an unmarried minor who has a parent living cannot be changed by his own act, by the appointment of a legal guardian, or by relinquishment of a parent's right of control. Where the residence of a minor child is derived, the California residence of the person from whom it is derived must satisfy the one-year durational requirement.

The residence of an adult student is determined by his/her own actions, and does not depend on financial support by one's spouse or parent (s).

Exceptions

1. A student who remains in this state after his or her parent, who theretofore domiciled in California for at least one year prior to leaving and has, during the student's minority and within one year prior to the residence determination date, established residence elsewhere, shall be entitled to resident classification until the student has attained the age of majority and has resided in the state the minimum time necessary to become a student so long as, once enrolled, he or she maintains continuous attendance at an institution.

2. nonresident students who are minors or 18 years of age and can evidence that they have been totally self-supporting through employment and actually present in California for the entire year immediately prior to the residence determination date and have evidenced the intent to make California their permanent home may be eligible for resident status.

3. A student shall be entitled to resident classification if immediately prior to the residence determination date he or she has lived with and been under the continuous direct care and control of any adult or adults other than a parent for not less than two years, provided that the adult or adults having such control have been California residents during the year immediately prior to the residence determination date. This exception continues until the student has resided in the state the minimum time necessary to become a resident student, so long as continuous attendance is maintained at an institution.

4. Exemption from payment of the non-resident tuition fee is available to the natural or adopted child, stepchild or spouse who is a dependent of a member of the United States military stationed in California on active duty. Such resident classification may be maintained until the student has resided in California the minimum time necessary to become a resident. If a student is enrolled in an

institution and the member of the military is transferred on military orders to a place outside the United States immediately after having been on active duty in California, the student is entitled to retain resident classification under conditions set forth above.

5. A student who is a member of the United States military stationed in California on active duty, except a member of the military assigned for educational purposes to a state-supported institution of higher education, shall be entitled to resident classification until he or she has resided in the state the minimum time necessary to become a resident.

6. A student who is an adult alien is entitled to resident classification if the student has been lawfully admitted to the United States for permanent residence for at least one year, in accordance with all applicable provisions of the laws of the United States and has thereafter established and maintained residence in California for more than one year immediately prior to the residence determination date.

A student who is an adult alien shall be entitled to resident classification if he is a refugee who has been granted parolee, conditional entrant or indefinite voluntary departure status in accordance with all applicable laws of the United States, provided that he has lived in the state for one year immediately prior to the residence determination date. (Effective until June 30, 1980.)

7. A student who is a minor alien shall be entitled to resident classification if the student and the parent from whom residence is derived have been lawfully admitted to the United States for permanent residence, provided that the parent has had residence in California for more than one year after acquiring a permanent resident visa prior to the residence determination date for the term.

A student who is a minor alien shall be entitled to resident classification if the student is a refugee who has been granted parolee, conditional entrant or indefinite voluntary departure status in accordance with all applicable laws of the United States; provided that he has lived in this state for one year immediately prior to the residence determination date. (Effective until June 30, 1980.)

8. Children of deceased law enforcement or fire suppression employees, who were California residents and who were killed in the course of law enforcement or fire suppression duties, may be entitled to resident status.

New, returning, and new graduate students are required to complete a Statement of Legal Residence. The student's status is determined by the Attorney in Residence Matters' Deputy who is located in the Registrar's Office.

The student is cautioned that this summation is not a complete explanation of the law regarding residence. The student should also note that changes may have been made in the rate of nonresident tuition and the residence requirements between the time this catalog is published and the relevant residence determination date. Regulations have been adopted by The Regents, a copy of which is available for inspection in the Registrar's Office of the campus.

All students classified incorrectly as residents are subject to reclassification and to payment of all nonresident fees not paid. If incorrect classification results from false or concealed facts by the student, the student also is subject to University discipline. Resident students who become nonresidents must immediately notify the Attorney in Residence Matters' Deputy.

Inquiries from prospective students regarding residence requirements for tuition purposes should be directed to the Attorney in Residence Matters, 590 University Hall, 2200 University Avenue, Berkeley, California 94720. No other University personnel are authorized to supply information relative to residence requirements for tuition purposes. Any student, following a final decision on residence classification by the Residence Deputy, may make written appeal to the Attorney in Residence Matters at the above address within 120 days after notification of the final decision by the Residence Deputy.

It is possible, however, that the Statement of Legal Residence may not be reviewed by the Residence Deputy prior to the time of registration. In such a case, the student who is finally classified as a nonresident will be contacted during the quarter for which the erroneous provisional classification was made, and will be required to pay the nonresident tuition fee for that quarter.

If incorrect classification results from false or concealed facts, the student is subject to University discipline and is required to pay all fees which would have been charged as a nonresident. Resident students who become nonresidents must immediately notify the Attorney in Residence Matters' Deputy.

University governance statement

The University of California was established under the State Constitution. It is governed by a Board of Regents composed of twenty-three members, sixteen appointed by the Governor of the State for twelve-year terms and seven who are members ex officio. These seven are: The Governor, the Lieutenant Governor, the Speaker of the Assembly, the State Superintendent of Public Instruction, the President and Vice President of the Alumni Association, and the President of the University. The Regents may appoint a student Regent with full voting powers.

The Regents have "full powers of organization and government, subject only to such Legislative control as may be necessary to insure compliance with the terms of the endowments of the University and the security of its funds." The Regents may be addressed

through the Secretary, Miss Marjorie J. Woolman, University Hall, 2200 University Avenue, Berkeley, California 94720.

The President of the University is the executive head of the University in all its departments and on all its campuses. He is appointed by The Regents and is directly responsible to them. The President and his staff, with headquarters in University Hall at Berkeley, direct the development of major system-wide policy.

The Chancellor, who is appointed by The Regents, is the chief administrative officer on each campus and administers the organization and operation of the campus. The Regents have established an Academic Senate, consisting of faculty and certain administrative officers. The Senate, by delegation of authority of The Regents, determines conditions for admission of students and for granting certificates and degrees. It authorizes and supervises all courses of instruction in the academic and professional schools and colleges and exercises general supervision of the discipline of students.

The student body government, known as the Associated Students, is described in chapter D.

Privacy Act of 1974

Sec. 438. (a) (1) No funds shall be made available under any applicable program to any State or local educational agency, any institution of higher education, any community college, any school, agency offering a preschool program, or any other educational institution, which has a policy of denying, or which effectively prevents, the parents of students attending any school of such agency, or attending such institution of higher education, community college, school, preschool, or other educational institution, the right to inspect and review any and all official records, files, and data directly related to their children, including all material that is incorporated into each student's cumulative record folder, and intended for school use or to be available to parties outside the school or school system, and specifically including, but not necessarily limited to, identifying data, academic work completed, level of achievement (grades, standardized achievement test scores), attendance data, scores on standardized intelligence, aptitude, and psychological tests, interest inventory results, health data, family background information, teacher or counselor ratings and observations, and verified reports of serious or recurrent behavior patterns. Where such records or data include information on more than one student, the parents of any student shall be entitled to receive, or be informed of, that part of such record or data as pertains to their child. Each recipient shall establish appropriate procedures for the granting of a request by parents for access to their child's school records within a reasonable period of time, but in no case, more than forty-five days after the request has been made.

(2) Parents shall have an opportunity for a hearing to challenge the content of their child's school records, to insure that the records are not inaccurate, misleading, or otherwise in violation of the privacy or other rights of students, and to provide an opportunity for the correction or deletion of any such inaccurate, misleading, or otherwise inappropriate data contained therein.

(b) (1) No funds shall be made available under any applicable program to any State or local educational agency, any institution of higher education, any community college, any school, agency offering a preschool program, or any other educational institution which has a policy of permitting the release of personally identifiable records or files (or personal information contained therein) of students without the written consent of their parents to any individual, agency, or organization, other than to the following—

(A) other school officials, including teachers within the educational institution or local educational agency who have legitimate educational interests;

(B) officials of other schools or school systems in which the student intends to enroll, upon condition that the student's parents be notified of the transfer, receive a copy of the record if desired, and have an opportunity for a hearing to challenge the content of the record;

(C) authorized representatives of (i) the Comptroller General of the United States, (ii) the Secretary, (iii) an administrative head of an education agency (as defined in section 409 of this Act), or (iv) State educational authorities, under the conditions set forth in paragraph (3) of this subsection; and

(D) in connection with a student's application for, or receipt of, financial aid.

(2) No funds shall be made available under any applicable program to any State or local educational agency, any institution of higher education, any community college, any school, agency offering a preschool program, or any other educational institution which has a policy or practice of furnishing, in any form, any personally identifiable information contained in personal school records, to any persons other than those listed in subsection (b) (1) unless—

(A) there is written consent from the student's parents specifying records to be released, the reasons for such release, and to whom, and with a copy of the records to be released to the student's parents and to the student if desired by the parents, or

(B) such information is furnished in compliance with judicial order, or pursuant to any lawfully issued subpoena, upon condition that parents and the students are notified of all such orders or subpoenas in advance of the compliance therewith by the educational institution or agency.

(3) Nothing contained in this section shall preclude authorized representatives of (A) the Comptroller General of the United States, (B) the Secretary, (C) and administrative head of an education agency or (D) State educational authorities from having access to student or other records which may be necessary in connection with the audit and evaluation of Federally-supported education program, or in connection with the enforcement of the Federal legal requirements which relate to such programs: Provided, that, except when collection of personally identifiable data is specifically authorized by Federal law, any data collected by such officials with respect to individual students shall not include information (including social security numbers) which would permit the personal identification of such students or their parents after the data so obtained has been collected.

(4) (A) With respect to subsections (c) (1) and (c) (2) and (c) (3), all persons, agencies, or organizations desiring access to the records of a student shall be required to sign a written form which shall be kept permanently with the file of the student, but only for inspection by the parents or student, indicating specifically the legitimate educational or other interest that each person, agency, or organization has in seeking this information. Such form shall be available to parents and to the school official responsible for record maintenance as a means of auditing the operation of the system.

(b) With respect to this subsection, personal information shall only be transferred to a third party on the condition that such party will not permit any other party to have access to such information without the written consent of the parents of the student.

(c) The Secretary shall adopt appropriate regulations to protect the rights of privacy of students and their families in connection with any surveys or data-gathering activities conducted, assisted, or authorized by the Secretary or an administrative head of an education agency. Regulations established under this subsection shall include provisions controlling the use, dissemination, and protection of such data. No survey or data-gathering activities shall be conducted by the Secretary, or an administrative head of an education agency under an applicable program, unless such activities are authorized by law.

(d) For the purpose of this section, whenever a student has attained eighteen years of age, or is attending an institution of post-secondary education the permission or consent required of and the rights accorded to the parents of the student shall thereafter only be required of and accorded to the student.

(e) No funds shall be made available under any applicable program unless the recipient of such funds informs the parents of students, or the students, if they are eighteen years of age or older, or are attending an institution of postsecondary education, of the rights accorded them by this section.

(f) The Secretary, or an administrative head of an education agency shall take appropriate actions to enforce provisions of this section and to deal with violations of this section, according to the provisions of this Act, except that action to terminate assistance may be taken only if the Secretary finds there has been a failure to comply with the provisions of this section, and he has determined that compliance cannot be secured by voluntary means.

(g) The Secretary shall establish or designate an office and review board within the Department of Health, Education and Welfare for the purpose of investigating, processing, reviewing, and adjudicating violations of this section, according to the procedures contained in sections 434 and 437 of this Act.

Contested Grades

Regulation A25.

(A) In the Santa Barbara division the term grade assigned to an individual student may be challenged by that student on grounds that the grade was based on an evaluation of the student's work by criteria not directly reflective of course performance such as discrimination on political grounds, or for reasons of race, religion, sex or ethnic origin.

(B) A student wishing to contest a grade on such grounds must present a preliminary written appeal to the executive committee of the school or college offering the course prior to the end of the term following the term in which the grade was assigned. Upon receipt of this preliminary appeal, the chairman of the executive committee or his/her designated agent (such as the Ombudsman) shall promptly seek a resolution of the issue by consulting the parties involved and the chairman of the instructor's department. If these efforts are unavailing within 30 days, the student may present a final written appeal to the executive committee. Upon receipt of this final appeal, the executive committee in consultation with both parties shall determine whether the evidence is sufficient to establish a *prima facie* case. If the dean or any other member of the executive committee was the instructor involved, that person shall not participate in these deliberations nor in those specified in (E).

(C) If the executive committee determines that a *prima facie* case exists, it shall request an investigation by the dean or the equivalent officer of the school or college concerned. However, if the dean was the instructor of the course in question, the Vice Chancellor for Aca-

demec Affairs shall be requested to undertake the responsibilities of the dean as stated below.

(D) In the investigation the dean shall provide a fair proceeding for both instructor and student, including information as to the character and object of the proceedings, knowledge of the allegations and evidence produced by the student to establish the *prima facie* case, and an opportunity for both parties to,answer. The dean shall prepare a report of the investigation, making findings of fact and reaching conclusions as to whether the grade was based on unacceptable criteria as defined in (A), and if so, the nature of such criteria, and the dean shall recommend the change to be made in accordance with the provisions stated below. Copies of the dean’s report shall be sent to the instructor and the student, both of whom shall have the opportunity to submit written comments to the executive committee before the committee’s final decision.

(E) If the executive committee decides that the grade assigned reflects unacceptable criteria as specified in (A) it shall authorize one of the actions stated below.

The committee may act only as follows:

- 1. Authorize retroactive withdrawal from the course;
- 2. authorize the change of a contested grade to P or S;
- 3. for courses offered in the College of Creative Studies, the executive committee shall determine the number of units to be assigned.

In each case before making its decision the committee shall again consult the parties concerned. The committee shall report its decision to the Registrar for recording. If the grade is P, such a grade of *Passed* shall be acceptable towards completion of a major if the challenged grade was in a course required for the major, but it shall not be counted in computing the number of courses the student may take on a *Passed/Not Passed* basis.

Regulation A10

(A) (SR 542) No student may enter upon any organized instructional activity until he has registered and his enrollment has been approved by the appropriate study-list authority. No student may begin or continue a course if the officer of instruction in charge considers him unqualified by lack of preparation. Late registration may not be used to justify inadequate performance in a course.

(B) In the Santa Barbara division an instructor’s refusal to permit a student to begin or continue a course may be challenged by the student on grounds that such refusal arises from discrimination on political grounds, or for reasons of race, religion, sex, ethnic origin, or for other arbitrary or personal reasons. The procedure for the initiation of such a challenge is set forth in regulation A25. However, the only final recommendations and decisions to be made by the officers and the committees therein specified shall be to deny or authorize the student’s entry into, or continuation in the course concerned.

● STUDENT GRIEVANCE PROCEDURES

UCSB is in compliance with all legislation which seeks to eliminate discrimination toward students. Titles VI and VII of the Civil Rights Act of 1964 prohibits discrimination on the basis of race, color, national origin, and religion. Title IX of the Educational Ammendments of 1972 prohibits discrimination on the basis of sex. Section 504 of the Rehabilitation Act of 1973 prohibits discrimination on the basis of handicap.

Members of the UCSB campus staff are available to answer student’s questions about nondiscrimination policies and procedures. Information and copies of the grievance procedure are available from these campus offices:

Assistant Vice-Chancellor for Student Affairs

Don Winter at (805) 961-3235
Cheadle Hall, Room 4105

Campus Title IX Coordinator

Harleen W. McAda at (805) 961-2771
Cheadle Hall, Room 5211

Women’s Center

Gail Ginder, Director, at (805) 961-3778
Building 434, Room 141

Special Services Program

Delores A. Ridenour, Director, at (805) 961-2668 V/TDD
Building 434, Room 125

Ombudsman’s Office

Geoffrey Wallace, Ombudsman, at (805)
961-3285
South Hall, Room 1510

Affirmative Action Office

Coordinator, at (805) 961-2089
Cheadle Hall, Room 3203

Educational Opportunity Program Offices

Central Office at (805) 961-4032
Cheadle Hall, Room 4105

American Indian Component

Linda Billey, Coordinator, at (805) 961-2558
Building 434, Room125

Asian American Component

Barbara Yee, Coordinator, at (805) 961-3528
Building 434, Room 125

Black Component

Robert Ridenour, Coordinator, at (805) 961-2887
Building 434, Room 122

Chicano Component
Yolanda Garza, Associate Director,
at (805) 961-3720, Building 406

Office of Student Services
Robert Evans, Director, at (805) 961-2927
Cheadle Hall Room 4105

Any student who wishes to file a grievance arising from
alleged discrimination must do so at the Office of the
Vice Chancellor for Student Affairs.

Brief Outline of Formal Procedure

WHO	WHAT	WHERE	WHEN
Student	Files Formal complaint	Office of the Vice Chancellor- Student Affairs.	Within 30 days or grievable action.
Vice Chancellor- Student Affairs	Forwards complaint	1) To designated investigator(s) 2) To department head where alleged violation occurred 3) Affirmative Action Coordinator 4) Title IX Compliance Officer, if sex-related.	Within 5 days of receipt of complaint.
Department head	Files written answer to charges.	With designated investigator(s).	Within 10 days
Investigator(s)	Examine circumstances of charge and reports findings.	1) To Vice Chancellor-Student affairs 2) Department head 3) Student 4) Copies to Affirm Act, Cord. &/or Title IX Officer	Within 10 days of receipt of dept. head reply or 20 days after receipt of complaint.
Student	Presents written request for formal hearing	To Vice Chancellor-Student Affairs	Within 10 days of receipt of investigator(s)' report.
Vice Chancellor- Student Affairs	Arranges for impartial hearing; student chooses hearing entity	Campus location	Within 30 days
Vice Chancellor- Student Affairs	Notifies grievant & dept. head of hearing time & place	Personally or by registered mail	15 days before hearing date.
Each party	Exchanges evidence	To be agreed upon	Within 7 days before hearing.
Hearing entity	Reports findings; makes recommendations	To Vice Chancellor- Student Affairs	Within 30 days after hearing.
Vice Chancellor- Student Affairs	Makes decision based on report & recommendations	To both parties & their representatives; To Affirm, Act, Coord, &/or Title IX Officer	Within 15 days from receipt of report
Student	Files appeal	To Chancellor	Within 30 days from date of decision.
Campus	Keeps all hearing records	As designated by the Chancellor & subject to privacy & disclosure legislation	For 3 years.
* All time referred to shall be working days.			

INDEX

Absence

- Leave of, 68
- Unauthorized, 68
(see also Withdrawal)
- Academic
 - Advising, 45
 - Calendar, 2
 - Counseling, 45
 - Disqualification, 72
 - Eligibility, 72, 78
 - Probation, 72,
 - Senate, 425
 - Standing, 69
- Accelerated Study Access Program, 90
- Accommodations, Living (see Housing)
- Accreditation, 23
- Acting courses, (see Dramatic Art)
- Adding courses, 67
- Administration of the University, 409
- Administrative Officers, 425
- Administrative Services Specialist Credential, 81
- Admission, Undergraduate, 28
 - to Advanced Standing, 31
 - Application procedures, 28
 - of California Residents, 29,
 - to College of Creative Studies, 83
 - to College of Engineering, 85
 - by examination alone, 31
 - of former students (Readmission), 68
 - to freshman standing, 29
 - to limited status, 33
 - of non-residents, 32
 - for second bachelor's degree, 33
 - of students from other countries, 34
- Admission Requirements
 - for Freshman Standing, 29
 - for Advanced Standing, 31
 - for Out-of-State Residents, 32
 - for Students from other countries, 34
(see also intercampus Transfer)
- Admission, Graduate, (see Graduate Division)
- Adult Reentry Program, 90
- Advanced Placement Examinations, (see Examinations)
- Advanced Standing, Admission requirements for, 31
- Advising, (see Counseling)
- African Area Studies, Bachelor of Arts degree, 101
 - Courses, 101
(see also Black Studies)
- Alumni Association, 52
- American History and Institutions requirement, 75
- Anatomy courses, (see Biological Sciences Courses—Zoology)
- Announcing candidacy for the degree, 67
- Anthropology, 103
 - Bachelor of Arts Degree
 - Cultural Emphasis, 103
 - Physical Emphasis, 104
 - Courses, 105
 - Doctor of Philosophy Degree, 104

- Master of Arts Degree, 104
- Application,
 - Fee for Admission, 29
 - for Admission, 28
 - for Intercampus Transfer, 33
 - for Financial Aid, 39
 - for Graduate Candidacy and Credentials, 78, 79
 - for Readmission, 68
 - for Refund of Fees, 37
 - for Scholarships, Loans, 39
 - for Transcript of Records, 71
- Applied Mathematics, (see Mathematics)
- Aquatic Biology, (see Biological Sciences)
- Arabic Courses, 179
(see also Middle Eastern Studies)
- Archaeology courses, (see Anthropology)
- Art and Art History, 109
 - Bachelor of Arts Degree
 - Art History, 110
 - Art Studio, 115
 - Courses
 - Art History, 111
 - Art Studio, 117
(see also Art Courses in Creative Studies, 166)
 - Doctor of Philosophy Degree, 110
 - Master of Arts Degree (Art History), 110
 - Master of Fine Arts, Degree (Art Studio), 116
- Art Museum, 22
- Arts and Lectures Program, 17
- Asian American Studies Program and Courses, 119
- Asian Studies, 120
 - Bachelor of Arts Degree, 120
 - Master of Arts Degree, 122
(see also Eastern Languages)
- Associated Students (ASUCSB), 36, 50
(see also Graduate Students Association, GSA)
- Astronomy courses, 354
- Athletic Coaching Program, 348
- Athletics and Recreation, 52
(see also Physical Activities)
- Attorney in Residence Matters, 425
- Auditions, 168, 334
- Authority of Instructors, 73
- Automobile registration, 37
- Awards, 43
(see also Financial Aid)

Bachelors Degree Requirements

- for all undergraduates, (see University Requirements)
- College Requirements
(see Creative Studies)
(see Engineering)
(see Letters and Science)
- Major requirements, (see appropriate departmental entry)
- Unit requirements, (see University and College Requirements)
- Bilingual/Cross Cultural Education, 81
- Biochemistry and Molecular Biology, 124
(see also Biological Sciences)
- Biological Sciences, 124
 - Bachelor of Arts Degrees, 127
 - Aquatic Biology, 127
 - Biochemistry-Molecular Biology, 128
 - Biological Sciences, 128

- Botany, 128
- Environmental Biology, 128
(see also Environmental Studies)
- Pharmacology, 129
- Physiology and Cell Biology, 129
- Zoology, 129
- Courses
 - Biology, 133
(see also Biology courses in Creative Studies, 166)
 - Botany, 140
 - Zoology, 141
- Graduate Programs, General Information, 129
 - Aquatic and Population Biology, 130
 - Biochemistry-Molecular Biology, 130
 - Environmental and Evolutionary Biology, 131
 - Interdepartmental Program in
 - Biochemistry and Molecular Biology, 132
 - Physiology and Cell Biology, 132
- Biology, (see Biological Sciences)
- Black Studies, 143
 - Bachelor of Arts degree, 143
 - Courses, 144
(see also African Area Studies)
- Black Studies, Center for, 26
- Botany, (see Biological Sciences)
- Breadth Requirements
(see Letters and Science, College of—General Education Program)
(see Engineering, College of—Program of Distribution)
- Business Economics (see Economics, Bachelor of Arts)
- Calendar, Academic and Administrative, 2, 3**
- California Grants, 43
(see also Financial Aid)
- California Teaching and Pupil Personnel Services Credentials, 81
- Campus tours, 49
- Candidacy for the degree, announcement of, 67
- Career Planning and Development, 46
- Carpenteria Salt Marsh Reserve, 27
- Center for Black Studies, 26
(see also Black Studies Courses, 143)
- Center for Chicano Studies, 24
(see also Chicano Studies Program and Courses)
- Center for Study of Democratic Institutions, 26
- Chancellor, 425
- Chemical and Nuclear Engineering, 204
 - Bachelor of Science Degrees
 - Chemical Engineering, 205
 - Nuclear Engineering, 205
 - Courses
 - Chemical Engineering, 208
 - Nuclear Engineering, 209
- Doctor of Philosophy Degree (Chemical Engineering), 207
- Master of Science Degrees
 - Chemical Engineering, 206
 - Nuclear Engineering, 206
(see also Engineering, College of)
- Chemistry, 147
 - Bachelor of Arts Degree, 147

- Bachelor of Science Degree, 148
- Courses, 149
 - (see also Chemistry courses in Creative Studies, 167)
- Doctor of Philosophy Degree, 149
- Master of Arts, 148
- Chicano Studies Courses, 153
- Chicano Studies, Center for, 24
- Child Care Center, 48
- Child Development, (see Psychology—Developmental Psychology)
- Childhood Education, Early, Specialist Credential, 81
- Chinese, (see Eastern Languages)
- Class Standing, Undergraduate, 69
- Classical Archaeology, (see Classics)
- Classical Civilization, (see Classics)
- Classics, 156
 - Bachelor of Arts Degrees
 - Classical Archaeology, 157
 - Classical Civilization, 157
 - Classics, 156
 - Greek, 156
 - Latin, 157
 - Courses
 - Classics, 158
 - Greek, 159
 - Latin, 160
 - (see also Literature in Translation)
 - Doctor of Philosophy in Classics, 157
 - Master of Arts Degree in Classics, 157
- Classification and Numbering of Courses, 98
- Coal Oil Point Reserve, 27
- Coaching, Athletic, Program in (see Physical Activities)
- College Entrance Examination Board Examination (CEEB), see Admission, Undergraduate,
- College of Creative Studies, (see Creative Studies, College of)
- College of Engineering, (see Engineering, College of)
- College of Letters and Science, (see Letters and Science, College of)
- College Entrance Examination Board (CEEB), (see Examinations)
- Combination Social Sciences, Bachelor of Arts Degree, 390
- Communication Studies (see Speech)
- Community College Credit, 33, 94
- Community and Organization Research Institute, 24
- Community Services, 51
- Comparative Literature, 162
 - Bachelor of Arts Degree, 162
 - Courses, 164
 - Doctor of Philosophy degree, 163
 - Master of Arts Degree, 162
- Comprehensive examinations, 69
- Computer Center, 22
- Computer Science, Department of (College of Engineering), 211
 - Bachelor of Arts Degree, 212
 - Bachelor of Science Degree, 212
 - Courses, 213
- Computer Science, (Letters & Science), 165
 - Bachelor of Arts Degree, 165
 - (see also Electrical Engineering and Computer Science)
- Computer Systems Laboratory, 24
- Concurrent Enrollment, 68,
- Conduct and Responsibility, Student, 72
- Conference Facilities, University, 23
- Contested Grades, 71
- Correspondence Directory, (see inside back cover)
- Costume Design, (see Dramatic Arts Courses)
- Counseling
 - Academic, 45
 - Career, 46
 - Credential, 47
 - Handicapped Students, 47
 - Orientation Programs, 45
 - Personal, 45
 - Preprofessional, 45
 - Students from Other Countries, 54
 - Veterans, 49
- Counseling Center, 46
- Courses of Instruction
 - Definition and Numbering of, 98
 - Repetition of, 71
 - Sample Listing of Course Entries, 98
 - Unit Value, Definition of, 69
 - (see also departmental entries for each course offered)
- Creative Studies, College of, 83
 - Admission Requirements, 83
 - College Requirements, 84
 - Courses, 166
 - Degrees and Majors Offered, Chart of, 18
 - Grading and Unit Requirements, 84
 - (see also University Requirements)
- Credential Programs, 81
 - (see also each departmental entry)
 - (see also Education, Graduate School of)
- Credit
 - for Advanced Placement Examination (CEEB), 87, 94,
 - for Community College Courses, 33, 94
 - for Courses Taken Elsewhere, 33, 94
 - by Examination, 69
 - for Extension Courses, 68
 - Limitation of Credit for
 - Community College Courses, 31, 94
 - Courses Graded Passed/Not Passed, 70
 - Extension Courses, 68
 - Independent Studies Course, 99
 - Repetition of Courses, 71
 - Numbering and Classification of Courses, 98
 - Value of Courses, Definition of, 69
- Cultural Anthropology (see Anthropology)
- Dance, 168**
 - Admission Audition, 168
 - Bachelor of Arts Degree, 168
 - Courses, 169
- Degree Candidacy, 67
- Degree Requirements—Undergraduate
 - College Requirements
 - Creative Studies, 83
 - Engineering, 85
 - Letters and Science, 91
 - General Education Requirements
 - (see appropriate college entry)
 - Major Requirements
 - (see appropriate departmental entry)
 - University Requirements for all Undergraduates
 - American History and Institutions, 75
 - Grade Point Average, 76
 - Major, 76
 - Residence, Academic, 75
 - Subject A: English Composition, 74
 - Unit, 75
- Degree Requirements—Graduate
 - (see Graduate Division)
- Degrees and Majors Offered, 18-21
 - Bachelor's Degree Requirements
 - (see Creative Studies, College of)
 - (see Engineering, College of)
 - (see Letters and Science, College of)
 - Doctor of Philosophy Degree, 79
 - (see also appropriate Departmental entry)
 - Major Requirements (see appropriate Departmental entry in **M**)
 - Departmental Majors, 18-21
 - Interdepartmental Majors, 18-21
 - Masters Degree, 78
 - (see also appropriate departmental entry)
 - (see also Education, Graduate School of)
 - (see also Graduate Division)
- Deposit Fee, 36
- Developmental Psychology, (see Psychology)
- Dining Commons, 38
- Directing, (see Dramatic Art)
- Disabled Students, Services for, 47
- Discovery, Journal of Undergraduate Research, 23
- Disqualification, Academic (for Scholastic Deficiencies)
 - of Undergraduates, 72
 - of Graduates, 78
- Design and Technical Theatre, (see Dramatic Art)
- Dismissal, for Scholastic Deficiencies, (see Disqualification, Academic)
- Dismissal for Misconduct, 72
- Doctoral Programs, 79
 - (see also Degrees and Majors Offered)
 - (see also each departmental entry)
- Dormitories, (see Housing)
- Double majors, 91
- Dramatic Art, 171
 - Bachelor of Arts Degree, 171
 - Courses, 174
 - Doctoral of Philosophy Degree, 173
 - Master of Arts Degree, 173
- Drawing Courses, (see Art Courses-Art Studio)
- Dropping Courses, 67
- Early Childhood Education Specialist Credential, 80**
- Eastern Languages, 178
 - Bachelor of Arts Degree in Chinese, 178
 - Courses
 - Arabic, 179
 - Chinese, 181
 - Hebrew, 179
 - Japanese, 180
 - Semitic Languages, 179
 - (see also Asian Studies)
 - (see also Literature in Translation)
 - (see also Middle Eastern Studies)
- Ecology
 - (see Environmental Studies)
 - (see also Biological Sciences, Environmental Biology)
 - (see also Mechanical and Environmental Engineering)

Economics, 182
 Bachelor of Arts Degrees
 Business Economics, 183
 Economics, 182
 Economics/Mathematics, 183
 Courses, 186
 Doctor of Philosophy Degree, 185
 Master of Arts, 183
 Urban Economics Internship Option, 185
 Education, Graduate School of, 80
 Courses, 194
 Credential Counseling, 47, 191
 Credential Programs, 81, 193
 Doctor of Philosophy Degree, 81, 192
 Masters Degree Programs, 80, 192
 Specialist Credentials, 81
 Teaching Credentials, 81
 (see also each departmental entry)
 (see also Educational Placement Service)
 Education Abroad Program, 16, 56
 Educational Opportunity Program, 47
 Educational Placement Service, 47
 Electrical and Computer Engineering, 214
 Bachelor of Science Degree, 215
 Courses, 213
 Doctor of Philosophy Degree in Electrical Engineering, 217
 Doctor of Philosophy in Computer Science, 219
 Master of Science Degree in Electrical Engineering, 217
 Master's Degree in Computer Science, 218
 (see also Computer Science)
 (see also Engineering, College of)
 Eligibility, Academic, 72
 (see also Admissions)
 Employment, Student, 47
 Engineering, College of, 85,
 Admission Requirements, 85
 College Requirements, 86
 Program of Depth, 86
 Program of Distribution, 86
 Degrees and Majors offered, 18
 (see also Chemical and Nuclear Engineering)
 (see also Electrical Engineering and Computer Science)
 (see also Mechanical and Environmental Engineering)
 Eligibility for continuance in, 87
 Engineering Courses, 203-233
 Grade and Unit Requirements, 87
 Summary of Degree Requirements, 88
 (see also, University Requirements)
 English, 234
 Bachelor of Arts Degree, 235
 Courses, 237
 Doctor of Philosophy Degree, 236
 Master of Arts Degree, 235
 English as a Foreign Language (ELPE), 54
 English Requirement
 for admission to the University, 29
 for students from other countries, 54
 for students in College of Engineering, 85
 for students in College of Letters and Science, 92
 Subject A: English Composition, for all undergraduates, 74
 (see also Subject A)
 Enrollment, dates for, (see Calendar)

Entrance Examinations
 for undergraduate admission, (see Admissions)
 for graduate admission, (see Graduate Division)
 for students from other countries, 54
 for admission to majors, 76
 for admission to courses
 (see also prerequisites for each course)
 Environmental Biology, (see Biological Sciences)
 (see also Environmental Studies)
 Environmental Engineering, (see Mechanical and Environmental Engineering)
 Environmental Studies, 241
 Bachelor of Arts Degree, 241
 Courses, 243
 Ergonomics and Physical Education, 246
 Bachelor of Arts Degrees
 Physical Education, 246
 Courses, 247
 (see also Physical Activities)
 Master of Arts Degree, 246
 Examinations
 Advanced Placement, CEEB, 87, 94,
 American History and Institutions, 75
 Admission requirements,
 for undergraduates, 31
 for graduates, (see Graduate Division)
 College Entrance Examination Board,
 Aptitude and Achievement, 87, 94
 Comprehensive, 69
 Credit by, 69
 English, for students from other countries, 54
 Final, 69
 Foreign Language Placement
 (see each language department entry)
 Graduate Record Examination, 78
 (see appropriate departmental entry)
 Medical, for admission, 66
 Subject A, 74
 Expenses and Fees, (see Fees)
 Experimental Psychology, (see Psychology)
 Extension, University, 16, 68

Fees

Admission Application Fee, 36
 Associated Students Membership Fee, 36
 Deposit, 36
 Educational Fee, 36
 Filing Fee, 36
 Graduate Student Association Fee, 36
 Intention to Register Deposit, nonrefundable, 36
 Intercampus Transfer Fee, 36
 Nonresident Tuition, 37
 (see also Nonresident Students)
 Parking Fee, 37
 Readmission Fee, 37
 Refunds, 37
 Student Accident and Health Plan, 36
 Transcript of Records, 71
 University Registration, 36
 Fellowships, Graduate, 41
 Film Studies, 249
 Bachelor of Arts Degree, 249
 Courses, 250
 Final Examinations, 69
 Financial Aid, 39

Application Procedures and Deadlines for, 39
 Fellowships, Graduate, 41
 Grants, 41
 Loans, 39
 Prizes and Awards, 43
 Scholarships, 40
 Work Study Program, 42
 Foreign Language
 Advanced Placement CEEB Tests, credit for, 87, 94
 Placement Examinations, (see each language department entry)
 Requirements for Admission
 for Graduates, (see appropriate departmental entry)
 Requirement for Graduation, (see entries for each major)
 Courses, (see Classics, Eastern Languages, French and Italian, Germanic and Slavic Languages and Literatures, Spanish and Portuguese)
 Foreign Literature in Translation, (see Literature in Translation)
 Foreign Students (see International Students)
 Fraternities, 39, 51
 French and Italian, 251
 Bachelor of Arts Degrees
 French, 252
 French Literature and Linguistics option, 252
 Italian, 253
 Certification, French Translator-Interpreter, 253
 Courses,
 French, 256
 Italian, 260
 Literature and Film, in English, 261
 Doctor of Philosophy Degree (French), 254
 Master of Arts Degree (French), 254
 Summer Institute, 253
 Freshman Standing, 29
 (see also Admissions)

General Education Program Requirements

Bachelor of Arts Degree, 92
 Bachelor of Music Degree, 94
 Bachelor of Science Degree, 94
 Credit earned through CEEB Advanced Placement Examinations, 87, 94
 (see also each college entry for appropriate College Requirements)
 (see also University Requirements for all undergraduates)
 Geography, 264
 Bachelor of Arts Degree, 264
 Courses, 266
 Master of Arts, 265
 Geological Sciences, 270
 Bachelor of Arts Degree, 271
 Courses, 272
 Doctor of Philosophy Degree, 272
 Master of Arts Degree, 272
 German, (see Germanic and Slavic Languages and Literatures)
 Germanic and Slavic Languages and Literatures, 277
 Bachelor of Arts Degrees
 Germanic Languages and Literatures (German), 278

Slavic Languages and Literatures
(Russian), 278

Courses, 282

- German, 282
- Russian, 285
- Scandinavian, 287
- Swedish, 286

Literature in translation, 287

Doctor of Philosophy Degree (German), 280

Master of Arts Degree (German), 279

Translator-Interpreter Program in German, 279

Government, Associated Student, 50

Governance, University, 409

Grades

- Changes of, 71
- Grading Option, 70
- Grade Points, 69
- Grad Point Requirements, 72
- Incomplete Grades, 70
- In-Progress Grades, 70
- Letter Grades, 69
- Notification of Grades earned each quarter, 71
- Pass/No Record Grades, 84
- Passed/Not Passed Grades, 70
- Plus-Minus Grades, 69
- Repetition of Courses, 71
- Satisfactory/Unsatisfactory Grades, 69
- Transcript of Record, 71

Graduate Courses, Numbering of, 99

Graduate Degrees offered, (see Degrees and Majors offered, 18-21)

Graduate Division, 77

- Admission deadlines and procedures, 78
- Candidacy for Graduate Degree, 78
- Doctoral Degree Requirements, 79
- Financial Aid, (see Financial Aid)
- Leave of Absence, 79
- Masters Degree Requirements, 78
- Readmission after Absence, 78
- Residence Requirements, Academic, 79
- Satisfactory/Unsatisfactory Grading, 79
- Standards of Scholarship, 79
- Study List Limits in, 78
- (see also Education, Graduate School of)
- (see also each departmental entry)

Graduate School of Education, (see Education, Graduate School of)

Graduate Students Association (GSA), 50

Graduation, Honors at, 72

Graduation Requirements, (see Degree Requirements)

Grants, (see Financial Aid)

Greek, (see Classics)

Handicapped Students, Services for, 47

Health Service, 47

Health and Accident Insurance Plan, 36, 47

Hebrew courses, 179

- (see also Middle Eastern Studies)

High School Requirements for Admission, (see Admission-Undergraduate)

Hispanic Civilization, 288

- Bachelor of Arts Degree, 288
- Master of Arts Degree, 290

Hispanic Languages and Literatures, (see Spanish and Portuguese-Doctor of Philosophy)

History, 291

American History and Institutions Requirement, 75

Bachelor of Arts Degree, 293

Courses, 297

Doctor of Philosophy Degree, 294

Master of Arts Degree, 293

Public Historical Studies, 293

Holidays, (see Calendar, 3)

Honorable Dismissal, 67

Honors at Graduation, 72

Honors, Prizes, and Awards, 43

- (see also Financial Aid)

Housing, 38

- Estimated Expenses, 38
- Family Student Housing, University-owned, 38
- On-campus Dormitories, 38
- Off-campus Housing, 38
- Sororities and Fraternities, 39

Incomplete Grades, 70

Independent Studies (198/199) Courses, 99

- (see also description of each 198 and 199 course)

Individual Major, 91

In-Progress (IP) Grades, 70

Institute

- for Interdisciplinary Applications of Algebra and Combinatorics, 25
- for Theoretical Physics, 26
- of Environmental Stress, 25

Instructional Development, 23

Insurance, Health (see Health Insurance)

Intercampus Institute for Research at Particle Accelerators, 25

Intercampus Transfer for Undergraduates, 33

Intercollegiate Athletics, 52

International Students, 53

- Admission Requirements, 34, 53
- American History and Institutions Waiver, 55, 75
- Counseling Services, 54
- Examination in English, 54
- Health Insurance Requirement, 54
- Nonresident Tutition, 55

Interdepartmental Majors, (see Degrees and Majors Offered, 18-21)

Interdisciplinary Courses, 306

Intramural Sports, 52

In progress grades, 70

Italian, (see French and Italian)

Japanese Courses, 180

Job placement (see Placement Center)

Junior Standing, Definition of, 69

Latin American Culture, (see Hispanic Civilization)

Language Requirements

- for Graduate Degrees, (see each departmental entry)
- for Major, (see major requirements in each departmental entry)
- for Undergraduate Admission, 68

Lapse of Status, 68

Latin, (see Classics)

Law and Society, 307

- Bachelor of Arts Degree, 307
- Criminal Justice Option, 308
- Courses, 308

Learning Resources, 23

Leave of Absence, 68

- (see also Withdrawal)

Letters and Science, College of, 89

- Admission Requirements, (see Admission)
- College Requirements, 91
- General Education Requirements

 - for Bachelor of Arts, 92
 - for Bachelor of Music, 94
 - for Bachelor of Science, 94

- Credit from Advanced Placement Examinations, 94

Courses, (see each departmental entry)

Degrees and Majors Offered, Chart of, 18-21

- (see also each departmental entry)

Grade Point Average Requirements

- for Continued Enrollment, 76
- for Graduation, 76

List of Courses, 96

Preprofessional Advising, 45

Residence Requirements for Graduation, Academic, 75

Summary of Degree Requirements, 96

Unit Requirements for Graduation, 96

- (see also University Requirements)

Liberal Studies, major, BA degree, 308,

Library, University, 22

Limited Status, (see Admission-Undergraduate)

Linguistics, 309

- Bachelor of Arts Degree, 309
- Courses, 310
- Related Courses in other Departments, 311

Literature, Comparative, (see Comparative Literature)

Literature, Film and Culture, 312

- Classics, 312
- Comparative Literature, 312
- Eastern Languages, 312
- English, 312
- French, 313
- Italian, 313
- Germanic and Slavic Languages, 312
- Spanish, 314

Living Accommodations, (see Housing)

Loan, (see Financial Aid)

Lower Division Classification

- of Courses, 98
- of Students, 69

Mail for Students, (see Post Office, University)

Majors

- (see Degrees and Majors, Offered, 18-21)
- Admission into, 76
- (see also departmental entries)
- Regulations governing, 76
- Grade Point Averages for Continuance in, 76
- Grade Point Averages for Graduation, 76
- Residence in, for Graduation, 76
- (see also Passed/Not Passed Grades for restriction of credit in major)

Marine Biology, (see Biological Sciences, Aquatic Biology)

Marine Science Institute, 25

Married Student, University-Owned, Housing, (see Housing)

Master Degree Programs

- (see Graduate Division)

(see also Degrees and Majors Offered, 18-21)
 (see also Education, Graduate School of)
 (see also each departmental entry)
Mathematics, 314
 Bachelor of Arts Degree
 Economics-Mathematics, 316
 Mathematical Sciences, 316
 Mathematics, 316
 Bachelor of Science Degree,
 Mathematical Sciences, 316
 Mathematics, 316
 Courses, 320
 (see also Mathematics courses in
 Creative Studies, 167)
 Doctor of Philosophy Degree, 318
 Graduate programs in Probability and
 Statistics, 318
 Master of Arts Degree
 Applied Mathematics, 318
 Mathematics, 317
Mechanical and Environmental Engineering, 227
 Bachelor of Science Degree in Mechanical
 Engineering, 229
 Courses, 230
 Doctor of Philosophy Degree (Mechanical
 Engineering), 229
 Master of Science Degree (Mechanical
 Engineering), 229
 (see also Engineering, College of)
Media, student
Medical Evaluation, 66
 (see also Student Health Service)
 (see also Health Insurance)
Medieval Studies, 328
 Bachelor of Arts Degree, 328
 Courses, 329
**Middle Eastern Studies, Bachelor of Arts
 Degree, 330**
 (see also Arabic Courses)
 (see also Hebrew Courses)
Military Science Program, and Courses, 331
**Molecular Biology and Biochemistry, (see
 Biological Sciences)**
 See also Biochemistry and Molecular
 Biology)
Motorcycle Registration, 37
Music, 333
 Bachelor of Arts Degree, 334
 Bachelor of Music Degree, 334
 Bachelor of Music/Special Performance,
 334
 Courses, 326
 Doctor of Philosophy Degree, 335
 Master of Arts Degree, 334
 (see also Music courses in Creative
 Studies)
**Natural Land and Water Reserves System,
 27**
Natural Science Program, 342
Nondiscrimination Statement, 425
Nonresident (Out-of-State) Students
 Admission Requirements, 32
 Nonresident Status, Definition of, 425
Nonresident Tuition Fee, 37
 (see also International Students)
**Nuclear Engineering, (see Chemical and
 Nuclear Engineering)**

Numbering of Courses, 98

Off-campus Housing, (see Housing)

 Off-campus studies, 27
Ombudsman, 49
Organizations, Student, 50
Organized Research Units, 23
**Out-of-State Applicants, (see Admission,
 Nonresident)**
**Oriental Languages, (see Eastern Languages)
 (see also Asian Studies)**
Orientation Programs, 45
 (see also Counseling)

Painting, (see Art, Studio Courses)

Parking on Campus, 37
Part-time attendance, 16, 68
Pass/No Record Grades, 84
Passed/Not Passed Grades, 70
Peer counseling, 46
Peer services, 51
Pharmacology major, (see Biological Sciences)
Philosophy, 343
 Bachelor of Arts Degree, 343
 Candidate in Philosophy, 344
 Courses, 345
 Doctor of Philosophy Degree, 344
 Master of Arts Degree, 344
Physical Activities Program and Courses, 348
 Athletic Coaching Program, 348
 (see also Ergonomics and Physical
 Education)
 (see also Recreational Activities)
 (see also Intercollegiate Athletics)
Physical Anthropology, (see Anthropology)
**Physical Education, (see Ergonomics and
 Physical Education)**
 (see also Physical Activities)
Physical Examination Requirement, 66
Physics, 351
 Bachelor of Arts Degree, 352
 Bachelor of Science Degree, 352
 Courses, 354
 (see also Physics courses in Creative
 Studies, 167)
 Doctor of Philosophy Degree, 354
 Master of Arts Degree, 353
 Master of Science in Scientific
 Instrumentation, 353
**Program in Physics and Nuclear Engineering,
 352**
Physiology and Cell Biology, 129
**Physiology Courses, (see Biological Sciences-
 Zoology Courses)**
Physiological Psychology, (see Psychology)
Placement Center, 46
 (see also Career Planning)
 (see also Work Study Program)
Planned Educational Leave Program, 68
Political Science, 357
 Bachelor of Arts Degrees
 Political Science, 358
 Political Science, Public Service
 Emphasis, 358
 Courses, 361
 Doctor of Philosophy Degree, 360
 Master of Arts Degree, 359
**Population Biology (see Biological Sciences-
 Graduate Programs)**
Portuguese, (see Spanish and Portuguese)

Post Office, University, 49
Preprofessional Information and Advising, 45
Printmaking (see Art Courses-Art Studio)
Privacy Act of 1974, 428
Prizes, Awards, 43
 (see also Financial Aids)
Probation, Academic, 72
Psychology, 366
 Bachelor of Arts Degree
 Developmental Psychology, 368
 Experimental Psychology, 368
 Psychology, 368
 Bachelor of Science Degree
 Physiological Psychology, 368
 Courses, 370
 Doctor of Philosophy degree, 370
**Public and Social Affairs, Interdepartmental
 Master of Arts Degree, 375**
**Public Historical Studies, Graduate Program In,
 293**
**Public Service Emphasis, Political Science, (see
 Political Science)**

Quantum Institute, 25

Reading Specialist Credential, 81

Readmission after Absence, 72
 Deadlines for Application, (see Calendar)
**Rebyson, (see Orientation) (see also,
 Counseling)**
Recreational Activities, 52
 (see also Physical Activities)
Records, Student, 71
Reentry program, 90
Refunds, (see Fees)
Regents, Board of, 422
Regents Scholarships, 40
Registration Dates and Procedures, 2, 66
Regulations Governing
 Academic Eligibility, 72
 Admission (see Admissions)
 Authority of Instructors, 73
 Concurrent Enrollment, 68
 Comprehensive Examinations, 69
 Credit by Examination, 69
 Final Examinations, 69
 Grading, 69
 Graduation, (see Degree Requirements)
 Nonresident Tuition, 37
 Registration, 66
 Student Conduct and Responsibility, 72
 Student Work, 73
Reinstatement of Disqualified Students, 72
Relations with Schools, 49
Religious Studies, 377
 Bachelor of Arts Degree, 378
 Courses, 380
 Doctor of Philosophy Degree, 379
 Master of Arts Degree, 378
Renaissance Studies, 387
 Bachelor of Arts Degree, 387
 Courses, 388
Repetition of Courses, 71
Requirements for
 Admission (see Admission)
 Credentials (see Education, Graduate
 School of)
 Degrees
 (see Degrees-Undergraduate)
 (see Graduate Division)

General Education
 (see appropriate college entry)
 (see also Regulations)

Research Units, (see Organized Research Units)

Reserve Officers Training Corps, ROTC, (see Military Science)

Residence, Classification for Tuition Purposes, 408
 Attorney for Regents in Residence Matters, 408
 Statement of Rules Governing, 408
 (see also Nonresident)

Residence Requirements, Academic, for
 Graduation,
 Graduates, 79
 Undergraduates, 76

Responsibility of Students, 73

Returning After Absence, (see Readmission After Absence)

Rhetoric course (see Speech)

Room and Board (see Housing)

ROTC (see Military Science)

Russian (see Germanic and Slavic Languages and Literatures)

Russian Area Studies, Bachelor of Arts Degree, 389

Salary and employment information, 425

Santa Barbara Campus Officers, 423

Santa Barbara, Community of, 9

Santa Cruz Island Reserve, 22

Satisfactory/Unsatisfactory Grades, (see Grades)

Scandinavian Literature courses, 287

Scholarships, 40
 California State, 42
 Regents, 40

School of Education, Graduate (See Education, Graduate School of)

Scientific Instrumentation, Master of Science Degree in (see Physics)

Sculpture, (see Art, Courses, Art Studio)

Second Bachelor's Degree (see Admission, for Second Baccalaureate)

Semitic Languages, Courses in, 175

Senate, Academic,

Senior Status, 70

Slavic Languages and Literature, (see Germanic and Slavic Languages and Literatures)

Social Activities, 50

Social Process Research Institute, 21

Social Sciences, Combination, Bachelor of Arts Degree, 390

Sociology, 391
 Bachelor of Arts Degree, 392
 Courses, 397
 Doctor of Philosophy Degree, 394
 Master of Arts Degree, 393

Social Security Benefits, 49

Sophomore Status, 70

Sororities, 39, 51

Spanish and Portuguese, 403
 Bachelor of Arts Degree,
 Portuguese, 403
 Spanish, 403
 Courses, 408
 Doctor of Philosophy Degree in Hispanic Languages and Literatures, 406
 Master of Arts Degree, Spanish, 405

Language and Culture, 405

Literature, 405

Linguistics or Bilingualism, 406

Spanish and Portuguese, 406

Portuguese Summer Institute, 404

Translator-Interpreter Certificate in Spanish, 404
 (see also Literature in Translation)

Speech, 414
 Bachelor of Arts Degree,
 Communication Studies, 415

Speech and Hearing Sciences, 415
 California License for Speech Pathologist or Audiologist, 416
 Courses, 416
 Doctor of Philosophy Degree, 415
 Master of Arts Degree, 415

Speech and Hearing Fellowships, 43

Sports, Recreation, 52
 (see also Physical Activities)

Statement of Intent to Register, 29

Statement of Residence, 425

Student Body, (see Associated Students)
 (see Graduate Students Association)

Student Life, Office of, 50

Student Services, Office of, 46

Student Residents, Office of, 49

Study List, 67

Subject A, English Composition Requirement, 74
 Courses, 421
 (see also English as a Second Language)

Subject to Disqualification, (see Academic Disqualification)

Summer Session, 16
 Calendar for, 3

Swedish Courses, 286

Systematic and Evolutionary Biology, (see Biological Sciences, Graduate Programs, Systematic and Environmental Biology)

Teaching Credential Curricula and Program, 81

(see also each Departmental entry)

Tests, (see Examinations)

Theatre Arts, (see Dramatic Arts)

Theoretical Physics, Institute for, 26

Tours of campus, 49

Transcript of Record, 71

Transfer, Intercampus, (see Intercampus Transfer)

Transfer Credit of Courses, (see Credit for Courses taken Elsewhere)

Transfer Students,
 Admission of (see Admission-Advanced Standing)

Translator-Interpreter Programs,
 French, 253
 German, 279
 Spanish, 404

Transportation, 49

Tuition for Nonresidents, (see Admission for Out-of-State Residents)
 Graduate, 35
 Undergraduate, 35
 Legal Definition of Residency for Tuition Purposes, 425
 (see also Fees)

Undeclared Major, 76

Undergraduate Admission, (see Admission-Undergraduate)

Undergraduate research journal, 23

Units, 69

University Center, UCEN, 50

University Extension, 16

University Governance, 427

University, History of, 12

University Library, 22

University Officers, 422

University B.A. Requirements, 74-76

Valentine Eastern Sierra Reserve, 27

Vehicle fees, 37

Ventura Learning Center, 27

Veterans Information, 49

Withdrawal,

From a Course, 67

From the University, 68
 (see also, Leaves of Absence)

Womens' Center, 51

Work Load, Academic, (see Study List)

Work-Study Program, 42

Yoruba courses, 144

Zoology, (see Biological Sciences)

Key to Map

Building	Location	Building	Location
Anacapa Residence Hall	G-7	Military Science (419)	F-3
Arts Building	G-4	Music	G-5
Arts & Lectures Ticket Office (402)	D-6	Noble Hall (Biology)	G-6
Biogeology Clean Laboratory	F-7	North Hall	E-5
Biological Science No. 2	G-7	Old Gym and Pool	E-4
Broida Hall (Physics)	E-6	Ortega Dining Commons	G-4
Buchanan Hall	E-6	Phelps Hall	E-6
Campbell Hall (Auditorium)	D-6	Placement Center (427)	D-5
Carrillo Dining Commons	H-2	Public Safety (Police)	A-2
Cheadle Hall (Administration)	D-5	Psychology	G-6
Chemistry	E-7	Recreation Office (455)	D-3
Chicano Studies Center (406)	F-6	Residence Halls Office (478)	G-6
Counseling Center (478)	G-7	Robertson Gym	D-4
Creative Studies (College of) (494)	G-5	San Miguel Residence Hall	H-5
De La Guerra Dining Commons	H-5	San Nicholas Residence Hall	H-5
Edwin W. Pauley Track	B-5	San Rafael Residence Hall	G-2
Ellison Hall	E-6	Santa Cruz Residence Hall	H-7
Engineering (College of)	F-8	Santa Rosa Residence Hall	G-6
Events Center	F-3	Snidecor Hall (Speech)	F-3
Facilities Management	B-3	South Hall	F-5
Faculty Club	G-3	Special Services (434)	F-4
Family Student Apartments	A-1	Stadium	B-1
Foreign Student Center (434)	F-4	Student Health	E-2
Geological Sciences	F-7	Student Publications	F-4
Geology (407)	F-6	Theatre	F-4
Girvetz Hall	F-5	University Center	G-4
Kerr Learning Resources Hall	E-5	University House	H-6
Library	F-5	Women's Center (434)	F-4
Marine Biology	I-7	Woodhouse Laboratory (546)	F-7



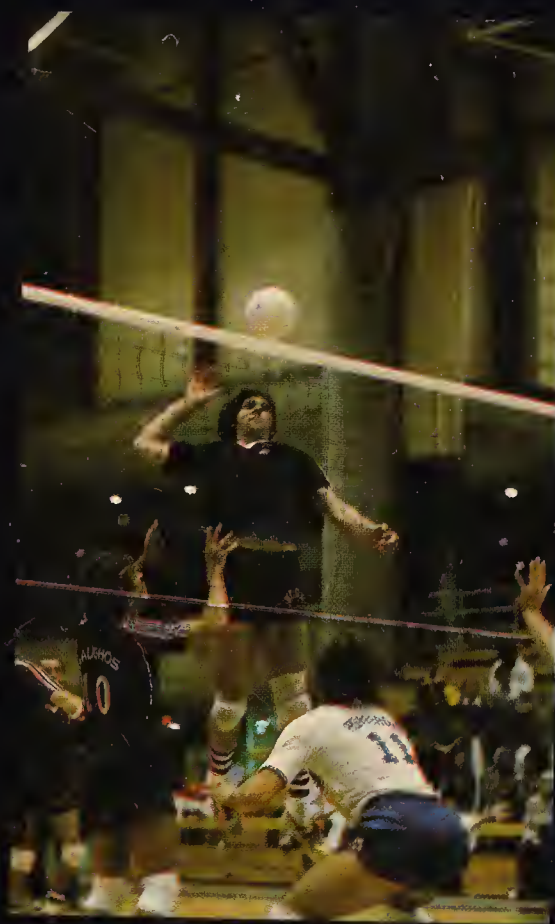
Correspondence Directory

University of California, Santa Barbara, California 93106

For campus telephone information dial (805) 961-2327.

Office	Location	Phone (Area Code 805)					
Admissions, Undergraduate	Cheadle Hall (Adm.) Rm. 1210	961-2881	V/TDD	Ombudsman	South Hall Rm. 1510	961-3285	
				Placement Center	Bldg 427	961-2811	
Associated Students	University Center	961-2566		Registrar	Cheadle Hall (Adm.) Rm 1117	961-3592	
Bookstore	University Center	961-3271					
Counseling Center	Bldg 478	961-2781	V/TDD	Relations with Schools and Colleges	Cheadle Hall (Adm.) Rm. 1234	961-2485	
Creative Studies, College of	Bldg 494 Rm. 101	961-2364	V/TDD	Student Health	Bldg 588	961-3371	V/TDD
				Student Services	Cheadle Hall (Adm.) Rm. 4105	961-2927	
Education Abroad	Girvetz Hall Rm. 1231	961-3763					
Education, Graduate School of	Phelps Hall Rm 1190	961-2036		Summer Sessions	Ellison Hall Rm. 1807	961-2047	
Engineering, College of	Engineering Bldg. Rm. 1010	961-2809	V/TDD				
Extension	Ellison Hall Room 1832	961-3231					
Financial Aid	South Hall Rm. 3607	961-2432					
Graduate Division	Cheadle Hall (Adm) Rm 3117	961-2277	V/TDD				
Graduate Students Association	South Hall Rm. 1409	961-3824					
Housing	Bldg. 434 Rm. 1010	961-2282					
International Students	Bldg. 434	961-2929					
Letters & Science, College of	Cheadle Hall (Adm.) Rm 2119	961-2038	V/TDD				

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